MEDIASTINAL DISEASE

HARE

FOTHERGILLIAN ESSAY 1888

THE LIBRARY OF THE

Bristol Medico-Chirurgical Society.

PRESENTED BY

R. Shingleton Smith

M.D.

May 9. 1913.

THE

PATHOLOGY, CLINICAL HISTORY

AND

DIAGNOSIS

OF

AFFECTIONS OF THE MEDIASTINUM

OTHER THAN THOSE OF THE HEART AND AORTA.

WITH TABLES GIVING THE CLINICAL HISTORY OF

FIVE HUNDRED AND TWENTY CASES.

BEING AN ESSAY TO WHICH WAS AWARDED THE FOTHERGILLIAN MEDAL OF THE MEDICAL SOCIETY OF LONDON, MARCH, 1888.

BY

HOBART AMORY HARE, B.Sc., M.D. (Univ. of Pa.),

DEMONSTRATOR OF THERAPEUTICS AND INSTRUCTOR IN PHYSICAL DIAGNOSIS IN THE MEDICAL DEPARTMENT, AND INSTRUCTOR IN PHYSIOLOGY IN THE BIOLOGICAL DEPARTMENT, OF THE UNIVERSITY OF PENNSYLVANIA; PHYSICIAN TO THE CHILDREN'S DISPENSARY OF THE UNIVERSITY HOSPITAL, AND THE MEDICAL DISPENSARY OF ST. AGNES' HOSPITAL; MEMBER OF THE AMERICAN SOCIETY OF PHYSIOLOGISTS, AND THE AMERICAN SOCIETY OF NATURALISTS; FELLOW OF THE MEDICAL SOCIETY OF LONDON.

PHILADELPHIA:

P. BLAKISTON, SON & CO.,

1012 Walnut Street.

1889.

Press of Wm. F. Fell & Co.,
1220-24 Sansom St.,
Philadelphia

TO

MY FRIEND AND COLLEAGUE,

DR. GEORGE E. DE SCHWEINITZ,

OPHTHALMOLOGIST TO THE PHILADELPHIA HOSPITAL, AND THE INFIRMARY FOR NERVOUS DISEASES, AND OPHTHALMIC SURGEON TO THE CHILDREN'S HOSPITAL,

I DESIRE TO DEDICATE

THIS ESSAY

AS A TOKEN OF MY WARM ESTEEM AND REGARD.

PREFACE.

In this essay, those cases of mediastinal disease affecting well defined organs in this part have not been included, since any attempt at such a sweeping consideration of all things in this region would carry one far beyond the scope evidently intended by the Medical Society of London.

The writer cannot let this opportunity pass without expressing his gratitude to the College of Physicians, of Philadelphia, for the use of their superb library. The galley slips of the volume of the Surgeon General's Catalogue containing the word "Mediastinum" were not out of press at the time this essay was written, and the largest number of references heretofore collected by any one person was fifty-three, so that nearly all of the cases collected in this essay had to be searched for in medical literature. The Fellows of the College will therefore be interested to learn that five hundred of the references, out of the five hundred and twenty cases collected by the author, were found in their library, the remaining number being obtained abroad or in Washington.

CONTENTS.

TOTAL NUMBER OF CASES 520.

THE

PATHOLOGY, CLINICAL HISTORY AND DIAGNOSIS

OF

AFFECTIONS OF THE MEDIASTINUM.

Notwithstanding the constant appearance of works purporting to give us a thorough insight into the diseases of the human chest, it is a fact worthy of remark that but few of them make more than a passing mention of those affections with which this essay deals. At the present time, when every day brings forth the result of some new research as to the functions or affections of each and every organ of the body, one would have thought that scarcely any stone of the human structure could have been left unturned; yet a very brief and casual glance at the literature of diseases of the mediastinum shows that, for some unaccountable reason, this subject has remained a field in which but few workers have toiled, and whose surface is therefore almost barren. Why the medical profession has passed by this most important area in our bodies is beyond the writer's understanding, unless it be that, among all the fatal ills that flesh is heir to, diseases affecting this space are fortunately of comparatively rare occurrence. It would be difficult, too, to discover any portion of the human body on which so little has been written of real value, and whose literature, meagre though it be, reaches from

the time of Hippocrates and Galen to the present day. The very fact that any disease of the mediastinum was to the older medical men an intangible thing, whose true nature could only be understood when a *post-mortem* was made, has aided undoubtedly in retarding the advancement of our knowledge in this line of medical literature. Though diseases having their seat in this locality were known by the profession almost in its infancy, the different phases of public and professional feeling often, for hundreds of years, prevented any autopsies being performed, and so, while our literature dates from hundreds of years ago, our true knowledge is as yet but very young.

Perhaps no better evidence of the dawning of the present desire for knowledge can be adduced than by this very subject, for just as long as popular prejudice prevented the foundation of learning, just so long did those diseases which affected almost unknown portions of the body remain the *bêtes-noir* of the diagnostician and the fields in which ignorance could readily overcome the efforts for good. The first observer who can be said to have begun the investigation of mediastinal and other intra-thoracic diseases, and to whom we still turn for original knowledge, was probably Van Swieten, who, writing early in the seventeenth century, described and recorded cases of abnormal conditions existing in this thoracic region. Almost as early as the writings of Van Swieten come those of Willis, whose keen perception and medical insight placed him oftentimes almost abreast of us in our present knowledge, and whose observations on certain diseases of the chest are still regarded by the profession of to-day as important and useful facts in making a differential diagnosis.

As we approach nearer and nearer to our own time, we find the writings on the subject gradually but surely increasing, until at the present day it can truly be said that more has been done in the last fifty years, toward advancing our knowledge of mediastinal disease, than was done in the preceding two hundred, and so, though our footsteps have been slow along this pathway, the study of such diseases has advanced with a speed only slow to

our eyes, owing to the rushing onward of our other knowledge. The importance and extent of the subject before us does not permit of a very prolonged historical sketch, and as nearly every writer on the subject since the time of Willis is named in the accompanying series of tables, giving the *résumé* of all the cases reported, an enumeration of them would be both wearisome and useless.

Unfortunately for the accuracy of the subject, so much doubt and confusion has arisen as to what may be considered mediastinal and what should be regarded as belonging to other parts of the chest, that all the cases reported as mediastinal are probably not strictly accurate; but notwithstanding this fact, the writer believes that, with scarcely an exception, every case collected by him is truly a case of mediastinal disease, since the headings of the tables are so worded as to draw out any anatomical error which might have crept in. At the same time it is but fair to say that while these cases are in the majority of instances what they profess to be, so far as their position is concerned, there is a much wider range for fallacy as regards their nomenclature. Pathology, like chemistry, changes its names and beliefs so often that it is not surprising that mistakes are made in the diagnosis of tumors, either by the naked eye or by the microscope, and that we find a tumor recorded as cancerous, when the writer's description of it proves it clearly to be sarcomatous. Such instances, in which the true identity of a tumor has evidently been overlooked, have been met with so frequently that the writer has been forced to give up any attempt to tabulate the cases by their microscopic or macroscopic appearances as recorded, merely placing them in the table bearing the name given to the tumor by its reporter. Aside from the difficulty of such a task, the results would merely leave the matter in a state of uncertain chaos from which no true conclusions could be drawn. If, therefore, it appears at times that any case is classed wrongly, the writer begs to state that it has not been placed there in his judgment, but in the judgment of its original observer. So far as is known, this collection of cases of mediastinal

disease surpasses in numbers by several hundred any collection heretofore made, and while the report of each case is of necessity short and concise, it is hoped that it may be found of value. After considerable thought, as to the best arrangement for making these tables clear and readily understood, the method used was decided upon, and the placing of each case under a given heading has forced the writer to include a certain number of cases in a table headed by the word, "Miscellaneous," owing to the fact that quite frequently a mediastinal growth was only reported as "malignant," without any exact statement as to its true nature.

It has also happened on several occasions that single cases of a given disease have been placed in this table for obvious reasons, and in some instances this has been carried even further, several cases of a particular lesion being placed here. But for this the number of tables with separate headings would have increased far beyond the proper limit.

At the first glance, it may seem that the writer has done wrongly in placing, in each instance, the tabulated record of disease before the verbal consideration of it. The object of such an arrangement becomes evident when it is remembered that most of the knowledge used in the writing of the essay is derived from these sources, and that they form an ever ready reference for the reader as he follows out any particular line to its conclusion. The tables of the various diseases are arranged with respect to their fatality and frequency, and for this reason the discussion of cancer is first taken up.

Before entering into a study of the morbid processes which affect the mediastinum, the writer may perhaps be permitted to give a short description of this area in order to refresh the memory of the general reader.

Briefly stated, the mediastinum is the space left in the median line of the chest by the non-approximation of the two pleuræ. It extends from the sternum in front to the spinal column behind, and, with the exception of the lungs, it contains all the thoracic viscera, and consequently the organs connected the most closely with animal life. Anatomists divide this region into an

anterior, middle and posterior spaee, although, as is usual in such instanees, the lines of demarcation between eaeh of the spaces are not rigidly marked.

The *anterior* spaee is bounded in front by the breast-bone or sternum, and *posteriorly* by the pericardium, but is not longitudinally in a direct line with the sternum, beeause the heart, occupying an oblique position on the left, eauses this space to be directed from above downward to the left. It is wider below than above, and is narrowest in the middle, since at this point the two surfaces of the pleuræ closely approach eaeh other. Indeed, in some eases these two surfaces are actually attached to one another. The contents of the anterior mediastinum eonsist prineipally in the origins of the sterno-hyoid and sterno-thyroid museles, the triangularis sterni and the internal mammary vessels of the left side. The remaining tissues found in it are the remains of the thymus gland, with a certain quantity of loose areolar tissue containing lymphatics arising from the upper surfaee of the liver.

The *middle* mediastinum is the most important of the three divisions, because of its contents, which eonsist of the heart, in its perieardial sac, the aseending aorta, the superior vena cava, the pulmonary arteries and veins, the phrenic nerves, and last of all, the bifureation of the traehea. It is broader than either the anterior or posterior mediastinal spaces.

The *posterior* spaee is triangular in form and runs parallel with the vertebral column. Its anterior line is formed by the perieardial sae and the roots of the lungs, while its lateral walls are bounded by both pleuræ. It contains the descending aorta, the greater and less azygos veins, and the left superior intercostal vein, the thoraeic duet, the pneumogastric and splanchnic nerves, the œsophagus and some lymphaties. It is next in importance to the middle mediastinal spaee.

TABLES

GIVING THE AGE, SEX, CAUSE, AREA INVOLVED, OTHER PARTS AFFECTED, CHIEF SYMPTOMS, DURATION, RESULT, BY WHOM AND WHERE REPORTED, VARIETY, PRIMARY SEAT, OCCUPATION AND REMARKS, OF ONE HUNDRED AND THIRTY-FOUR (134) CASES OF CANCER OF THE MEDIASTINUM.

CARCINOMA.

No.	Age.	Sex.	Cause.	Area Involved.	Other Parts Affected.	Chief Symptoms.	Duration.	Result.	By Whom and Where Reported.	Variety.	Primary Seat.	Occupation.	Remarks.
1	45	M.	...	Anterior and middle mediastinum.	Adherent to intercostal spaces and sternum at 2d rib, which was altered and friable. Posterior surface of tumor adherent to superior lobe of lung.	Pain in chest. Œdema of face. Prominent tumor at xiphoid cartilage. Dyspnœa.	6 mos.	Death.	Martineau. *Bul. de la Soc. Anat.*, 1861.	Encephaloid.	Not stated.	...	...
2	30	M.	...	Anterior mediastinum.	Tumor closely connected to left lung. Right lung congested. Pericardium contained "grumous serum."	Dyspnœa. Pain and dysphagia. Loss of voice.	8 weeks.	Death.	Clark. *Lancet*, London, July 6th, 1870, p. 10.	Not stated.	Mediastinum.	Stone mason.	...
3	37	F.	...	Posterior mediastinum. Bronchial glands of.	Pressed on œsophagus at bifurcation of trachea. Trachea twisted on left bronchus. Left vagus involved. Left recurrent laryngeal ran through growth.	Dyspnœa and cough. Pain in side. Emaciation. Aphonia	5 mos.	Death.	Yeo. *Lancet*, Nov. 18th, 1876, p. 707.	Not stated.	Mediastinum. "Cancer found nowhere else."	Housewife.	...

4	31	M.	...	Anterior mediastinum.	Adherent to left lung, which was useless. Adherent to pericardium and anterior face of heart.	Pain in præcordia.	Not stated.	Death.	Martin Solon. Transation Médicale, Vol. II, p. 128, 1830.	Lardaceous.	Probably mediastinal.	...	...
5	44	F.	...	Anterior mediastinum.	Cancer of pericardium, right kidney and liver. Pleura also cancerous.	Lancinating pain. Dyspnœa. Œdema of left arm.	About 3 years.	Death.	Fearnside. *Lancet*, April, 1844, also *Archiv. gén. de méd.*, Vol. XII, 4th. ser., p. 456.	Not stated.	Breast.	...	Extirpated by Quain in breast, but was recurrent.
6	30	M.	...	Middle mediastiuum.	Affected lower part of trachea and left pleura.	Dyspnœa. Laucinating pain in chest. Dysphagia. Vomiting.	3 years.	Death.	Bell. *Monthly Jour. of Med.*, July, 1846.	Scirrhus.	...	...	...
7	28	M.	...	Anterior mediastinum.	Tumor enveloped roots of luugs and pericardium. Included right and left innominate veins and both vena cava. The ascending cava had its calibre decreased.	Epistaxis. Pain in chest. Œdema of face. Cough.	...	Death.	Ransom. *Brit. Med. Jour.*, Feb. 22d, 1873, p. 199.	Eucephaloid.	Mediastinum. "No growth elsewhere."	Porter.	...
8	34	M.	...	Anterior mediastinum; dipped into posterior mediastiuum.	Lungs studded with cancer. Tumor involved œsophagus aud decreased its lumen at diaphragm. Pericardium full of fluid.	Dysphagia. Cough. Marasmus. Profound apathy.	4 mos.	Death.	Hayden. *Brit. Med. Jour.*, March 31st, 1877, p. 392.	Scirrhus.	Not stated.	Railroad laborer.	...
9	...	...	...	Mediastinum.	Attached to inferior lobe of lung on right side. Extended to diaphragm. Dropsy of pleura aud pericardium.	...	...	Death.	Morgagni. "De Sedibus et causis morborum epist." XVI.	Scirrhus.	...	...	...

No.	Age.	Sex.	Cause.	Area Involved.	Other Parts Affected.	Chief Symptoms.	Duration.	Result.	By Whom and Where Reported.	Variety.	Primary Seat.	Occupation.	Remarks.
10	32	M.	...	Anterior mediastinum.	Pericardium was thickened and contained pus. Bronchial glands tumefied and softened.	Pain, fever. Dyspnœa and œdema of lower limbs.	5 mos.	Death.	Daudé. "Les affections du mediastin," Paris, 1872, p. 36.	Not stated.	Mediastinum.	Refiner.	...
11	42	F.	...	Anterior and posterior mediastinum, both filled.	Numerous colloid tumors in breast and axillary glands, also in lung and in pleura.	...	"Long time."	Death.	Briquet. *Bull. de la Soc. anat.*, 1851, p. 409.	Colloid.	Not stated.	...	...
12	18	M.	...	Anterior mediastinum.	Pressed on left bronchus and displaced heart. Involved pericardium.	Dyspnœa and pain. Tumor pulsated.	3 weeks after appearance of tumor.	Death.	Nélaton. *Bull. de la Soc. anat.* 1833, p. 105.	Not stated.	Not stated.	...	...
13	40	M.	...	Middle mediastinum.	Involved left lung. Pressed on brachio-cephalic veins and superior vena cava. Occluded orifice of right brachio-cephalic vein.	Œdema of face on left side.	...	Death.	Demarquay. *Bull. de la Soc. anat.*, 1847, p. 411.	Not stated.	Not stated.	...	...
14	40	F.	...	Entire mediastinum.	Occluded left bronchus. Destroyed left vagus. Obstructed left branch of pulmonary artery.	Dysphagia and dyspnœa.	About 3 mos.	Death.	Bennett. "Intrathoracic growths," London, 1872, p. 79.	...	Mediastinum.	Housewife.	...

15	20	F.	...	Anterior and posterior mediastinum.	None mentioned.	Dyspnœa and syncope.	About 6 mos.	Death.	Bennett. "Intrathoracic growths," London, 1872, p. 87.	Encephaloid.	Mediastinum.	Servant.	...
16	11	F.	...	Whole left side.	Whole left side.	Dyspnœa and lividity of face.	Not stated.	Death.	Bennett. "Intrathoracic growths," London, 1872. p. 101.	Medullary.	Mediastinum.	Child.	...
17	23	F.	...	Nearly entire mediastinum.	Invaded spinal cord at level of 4th and 5th ribs and pressed on cord, but produced no disease; also invaded cord at 3d lumbar vertebræ.	Slight Dyspnœa and pain.	About 4 mos.	Death.	Bennett. "Intrathoracic growths," London, 1872, p. 123.	Not stated.	Mediastinum.	Servant.	...
18	Not given.	F.	...	Posterior mediastinum.	Extended to diaphragm along aorta and vena cava. In the cellular tissue.	Phlebitis in arm and leg.	Not stated.	Not stated.	Larsen. *Bibliothek. für Laeger*, Jan. 1850, also *Lond. Med. Jour.*, No. 2., 1850.	Not stated.	Not stated.	...	...
19	11	M.	...	Anterior and posterior mediastinum. Extended from middle dorsal region to sacrum.	Muscles of back. Dura mater of cord. Pleura and lungs all were cancerous. Cancerous glands in groin. Left ureter occluded by cancer of wall of bladder pressing on it.	Great anæmia; swollen belly and tympanites. Numbness of left arm with œdema of left leg and thigh.	About 2 mos.	Death.	Bennett, "Intrathoracic growths," London, 1872, p. 137.	Encephaloid.	Not stated.	Not stated.	...
20	32	M.	...	Middle mediastinum.	Involved trachea and great blood vessels of chest.	Asphyxia.	6 mos.	Death.	Deville. *Mém. de la Soc. anat.*, 1846. p. 236.	Not stated.	Not stated.	...	...
21	34	M.	...	Anterior and middle mediastinum.	Enveloped bronchi, trachea and great blood vessels. Prolonged itself by digitations into the intercostal spaces.	Laryngeal cough. Dysphagia. Alteration of voice. Cephalalgia. Face œdematous and veins swollen.	5 or 6 mos.	Death.	Destord. "These de Paris," 1866, No. 184, p. 30.	Encephaloid.	Not stated.	Blacksmith.	...

No.	Age.	Sex.	Cause.	Area Involved.	Other Parts Affected.	Chief Symptoms	Duration.	Result.	By Whom and Where Reported.	Variety.	Primary Seat.	Occupation.	Remarks.
22	66	M.	...	Posterior mediastinum to anterior mediastinum.	Superior vena cava wall involved and its calibre diminished. Cancerous masses in the lung.	Intense dyspnœa. Oppression. Œdema of chest and diarrhœa.	2 or 3 mos.	Death.	Oulmont. Mém. de la Soc. Méd. d'observation, Tom. III, p. 436.	Encephaloid.	Not stated.	Match maker.	...
23	43	M.	Caught cold.	Anterior mediastinum.	Attached to pericardium, sternum and ribs. Vena cava degenerated by pressure. Right lung reduced in size.	Intense dyspnœa and cough.	About 4 mos.	Death.	Oulmont. Mém. de la Soc. Méd. d'observation, Tom. III, p. 402.	Not stated.	Not stated.	Lace maker.	...
24	30	M.	...	Anterior and middle mediastinum.	Tumor adherent to sternum. Involved vena cava superior, affected lungs, descending aorta and vagus.	Dyspnœa. Pain in chest. Sanguinolent expectoration and headache.	9 mos.	Death.	Oulmont, Mém. de la Soc. Méd. d'observation, Tom. III. p. 450.	Encephaloid.	Not stated.	Furniture mover.	...
25	20	M.	...	Anterior mediastinum.	Obliteration of vena azygos. Pulmonary artery of right side decreased in calibre also the vena cava, which cava not stated.	Pain in back and right thorax. Œdema and congestion of the face. Dilated veins on thorax walls.	4 mos.	Death.	Budd. "Medico-Chir. Trans." XLII. p. 215, 1859; also *arch. gén. année*, 1860.	Not stated.	Not stated.	Typographer.	...
26	44	M.	...	Anterior and middle mediastinum.	Trachea, aorta and pulmonary artery involved.	Œdema of face and lower extremities.	Not stated. 10 days after first seen.	Death.	Mauriac. *Bull de la Soc. Anat.* 1860, p. 151.	Scirrhus.	Not stated.	Boat carpenter.	...

27	Adult.	F.	...	Anterior and posterior mediastiuum.	Lungs and pleura involved. Passed down lymphatics to 3d. lumbar vertebræ. Large mass round gall bladder.	Œdema of left arm and symptoms of local thrombosis. Dyspnœa and cough.	A few months.	Death.	West. Trans. Path. Soc. Lond. XXXVII, p. 144.	Scirrhus.	Gall bladder.	Housewife.	...
28	25	M.	...	Glands of anterior and posterior mediastinum.	Left pleural cavity full of straw-colored liquid. Bronchi contained pus.	Dyspnœa and pain.	About 2 mos.	Death.	Rees. *Lancet*, Aug. 9th, 1864, also *Schmidt's Jahrbücher*, Vol. CXXVI, p. 173.	Encephaloid.	Mediastinum; no disease mentioned elsewhere.	Gardener.	...
29	53	M.	Chancre 20 years before.	Posterior and middle mediastinum.	Involved right lung. Occluded right bronchus. Displaced the heart.	Dusky hue of skin. Emaciation and dyspnœa.	8 mos.	Death.	Yeo. *Brit. Med. Jour.*, 1875, p. 342.	Medullary.	Mediastinum.	Picture colorer.	...
30	29	M.	...	Anterior mediastinum.	Involved aorta and pulmonary artery.	Dyspnœa. Livid face and distention of cervical veins. Œdema of face.	Not stated.	Death.	Hayden. *Dublin Jour. Med. Sci.*, Dec., 1872; also *Rev. des Sci Med.*, Vol. II, p. 179.	Not stated.	Mediastinum.	...	...
31	...	...	...	Anterior mediastinum.	Aorta, pulmonary artery, œsophagus and trachea implicated.	Disturbance of vision. Redness of face. Muco-purulent expectoration.	2 mos.	Death.	Ransom. *Med. Times and Gazette*, Nov. 20th, 1872, p. 599.	Encephaloid.	Mediastinum.	...	...
32	...	...	...	Mediastinum.	Lung involved.	...	...	Death.	Flament. Recueil de mém. de méd. et de Chir. militaire.	Encephaloid.	...	...	...
33	...	...	...	Sternum.	Ribs, frontal bone, vertebræ and ilium.	...	...	Death.	Specimens in Royal College of Physicians, London, 1677 and 1685.	Medullary.	...	...	...
34	...	...	...	Sternum.	Vertebræ, ribs and iliac bones.	...	...	Death.	St. Bartholomew's Museum No. 1132.	Soft cancer.	...	...	...

No.	Age.	Sex.	Cause.	Area Involved.	Other Parts Affected.	Chief Symptoms.	Duration.	Result.	By Whom and Where Reported.	Variety.	Primary Seat.	Occupation.	Remarks.
35	63	M.	...	Anterior mediastinum.	Lungs, liver and abdominal lymphatics. Perforation of duodenum.	Exhaustion and hemoptysis.	15 days.	Death.	Bristowe. Trans. Path. Soc., London, XXI, p. 355.	...	Not stated.	Appraiser's assistant.	...
36	37	M.	...	Anterior and middle mediastinum.	Root of left lung and pericardium.	Hemoptysis.	6 mos.	Death.	Moore. Trans. Path. Soc., Lond., XXXV, p. 372.	Endothelioma.	...	...	...
37	55	F.	...	Mediastinum.	Sternum.	Cachexia and suffocation.	Not stated.	Death.	Lebert. "Physio'ogique Pathol·ogique."	Scirrhus.	...	...	...
38	50	F.	"Disordered menstruation."	Mediastinum.	Bronchial glands; lungs, pleuræ and pericardium.	Loss of flesh; cachexia and œdema of left arm	7 mos.	Death.	Quain. Trans. Path. Soc., Lond., Vol. III, p. 251.	Not stated.	"Thorax."	Servant girl.	...
39	Adult.	M.	...	Posterior mediastinum.	Left pulmonary artery and aorta; passed to root of lung.	Dyspnœa.	...	Death.	Jenner. Trans. Path. Soc., Lond., Vol. III, p. 253.	Carcinoma reticulare.	Mediastinum.	...	...
40	43	F.	...	Anterior mediastinum.	Right lung; pressed on right auricle, also on superior vena cava, aorta, trachea and œsophagus and bronchial tubes; cancer of left breast.	Exophthalmos; œdema of face; dyspnœa; anasarca of chest and abdomen.	Seen for 7 mos.	Death.	Pollock. Trans. Path. Soc., Lond., Vol. III, p. 254.	Encephaloid.	Not stated.	Widow.	...
41	32	M.	Prolonged exposure to wet.	No post-mortem allowed.	...	Dyspnœa.	Very rapid in course.	Death.	McCall Anderson. *Glasgow Med. Journ.*, Feb., 1872, p. 171.	Not stated.	Mediastinum?	Ship carpenter.	...
42	44	M.	...	Anterior mediastinum.	Pressed on right bronchus.	...	...	Death.	*Glasgow Med. Journal*, Jan., 1876, p. 1.	"Keloid."	Mediastinum.	Iron worker.	...

43	30	M.	Heavy lifting.	Entire mediastinum.	Glands enlarged; metastasis to liver and pancreas.	Dysphagia; dyspnœa and loss of voice.	2 weeks after first symptom.	Death.	Clark. *Lancet*, London, 1872, II, p. 10.	Not stated.	Mediastinum.	Stone mason.	...
44	56	F.	...	Anterior mediastinum.	Compression of superior vena cava; penetrated pericardium; infiltrated glands.	Dyspnœa and dysphagia.	Not stated.	Death.	Law. *Dublin Journ. Med. Sci.*, Feb. and May, 1846, p. 497.	Not stated.	Mediastinum.	Servant.	...
45	45	M.	...	Anterior mediastinum.	Compressed and perforated superior vena cava; affected omental and axillary glands.	Hemoptysis and exhaustion.	Not stated.	Death.	O'Ferrall. *Dublin Journ. Med. Sci.*, p. 227, Aug. and Nov., 1846; *Trans. Path. Soc.*, Dub.	Not stated.	Secondary in mediastinum.	...	...
46	29	M.	...	Anterior mediastinum.	Surrounded the great thoracic vessels.	Lividity of face and dyspnœa.	About 6 mos.	Death.	Hayden. *Dublin Journ. Med. Sci.*, p. 514, July and Dec., 1872.	Not stated.	Not stated.	Cabinet maker.	...
47	50	M.	...	Anterior mediastinum.	Affected lung; surrounded vena cava and large thoracic veins.	Rapid respiration; swollen face; œdema of neck and chest.	3½ mos.	Death.	Begbie. *Arch. of Med.*, 1861, Vol. II, p. 145.	Not stated.	Mediastinum.	Mason.	...
48	46	F.	...	Anterior mediastinum.	Breasts and mediastinal glands; pleural cavities contained fluid.	Dyspnœa and cachexia; coma.	12 mos.	Death.	Seen by the writer.	Scirrhus.	Breast.	Housewife.	...
49	22	M.	Syphilis.	Anterior and posterior mediastinum; in position of thymus gland.	Diaphragm and costal pleura studded with cancer.	Dyspnœa and pain in chest.	Not stated.	Death.	Bristowe. Trans. Path. Soc., Lond., Vol. v, p. 185.	Not stated.	Thorax.	...	...
50	54	M.	...	Glands of mediastinum.	Œsophagus; pressed on bifurcation of trachea; perforated artery, but does not say which one.	Left hemiplegia; loss of flesh; dysphagia.	6 mos.	Death.	West. Trans. Path. Soc., Lond., XXXVII, p. 143.	Scirrhus.	...	...	...

No.	Age.	Sex.	Cause.	Area Involved.	Other Parts Affected.	Chief Symptoms.	Duration.	Results.	By Whom and Where Reported.	Variety.	Primary Seat.	Occupation.	Remarks.
51	44	M.	Syphilis.	Posterior mediastinum.	Cancer extended to tissues of neck. Surrounded trachea, almost obliterated left bronchus and passed along it to the lung. Both pulmonary arteries obstructed. Left innominate and subclavian compressed. Right vagus involved.	Hemoptysis. Pain in chest. Œdema of left arm and walls of chest.	12 to 13 weeks.	Death (sudden).	West. Trans. Path. Soc., London, XXXVII, p. 141.	Medullary.	Mediastinum.	...	...
52	32	F.	...	Anterior mediastinum; also whole left side of chest.	Adherent to sternum, costal cartilages and ribs on left side. Left pleura much thickened and diseased. Diaphragm infiltrated. Lymphatics of thorax and abdomen diseased.	Dysphagia. Dyspnœa and œdema of left arm.	3 or 4 mos.	Death.	Church. Trans. Path. Soc., London, Vol. XX, p. 102.	...	In remains of thymus gland.	...	...
53	23	M.	...	Anterior mediastinum.	Lungs infiltrated. Destroyed part of sternum. Heart glued to pericardium.	Dysphagia. Cough and dyspnœa.	7 mos.	Death.	Holmes. Trans. Path. Soc., London, Vol. XX, p. 29.	Encephaloid.	Mediastinum.	Ship marine.	This tumor projected outside chest wall by an opening in sternum.

54	41	M.	Syphilis?	Anterior mediastinum.	Pressed on bronchial glands and recurrent laryngeal nerves; also on trachea and left bronchus. Cervical glands enlarged.	Dyspnœa. Wasting. Cachexia and cough.	11 mos.	Death.	Williams. Trans. Path. Soc., London, XXIV, p. 23.	Not stated.	Anterior mediastinum.	Waiter.	...
55	...	M.	...	Entire mediastinum.	Right lung displaced to the right. Tumor adherent to vertebral column.	Exhaustion. Œdema of leg.	Several years.	Death.	Williams. Trans. Path. Soc., London, XXVIII, p. 23.	Not stated.	Secondary from cancer of sciatic.	...	...
56	41	M.	...	Superior part of anterior mediastinum.	Involved clavicle and subclavian, and innominate arteries. Dilatation of left bronchus.	Dyspnœa. Mucous expectoration. First rib and clavicle elevated from a large tumor. Right arm œdematous.	1 year.	Death.	Tinniswood. *London and Edinburgh Med. Jour.*, July, 1840.	...	Not stated.	Tinner.	...
57	28	M.	...	Posterior and middle mediastinum.	Lungs cancerous. Tumor adherent to vertebræ. Trachea involved.	Lancinating pain in chest. Dyspnœa and cough.	About 9 mos.	Death.	Kilgour. *London and Edinburgh Med. Jour.*, Oct., 1844.	Encephaloid.	Not stated.	Laborer.	...
58	47	M.	...	Posterior mediastinum.	Lung cancerous. Trachea involved. Tumor reached along clavicle, diaphragm and vertebræ.	Cough. Pain in chest.	7 mos.	Death.	Kilgour. *London and Edinburg Med. Jour.*, Oct., 1844.	Encephaloid and scirrhus.	Not stated.	Mechanic.	...
59	40	F.	...	Extended from 3d to 4th rib in anterior mediastinum.	Lungs cancerous. Ribs involved.	Dyspnœa. High fever and abundant expectoration.	...	Death.	Krause. *London and Edinburg Med. Jour.*, June, 1844.	Encephaloid.	Not stated.	Not stated.	...
60	20	F.	Parturition.	Superior part of anterior mediastinum.	Lung cancerous. Pericardium contained 4 oz. of serous liquid.	Pain under sternum. Cough, expectoration and hemoptysis.	6 mos.	Death.	Burrow. Medico-Chir. Trans., Vol. XXVII, 1844.	Not stated.	Not stated.	...	...

No.	Age.	Sex.	Cause	Area Involved.	Other Parts Affected.	Chief Symptoms.	Duration.	Results.	By Whom and Where Reported.	Variety.	Primary Seat.	Occupation.	Remarks.
61	12	F.	...	Anterior and posterior mediastinum.	Right pleura and lung; also heart.	Pain, cough and dyspnœa.	1 mo.	Death.	Burton. *Med. Times and Gazette*, Sept. 4th, 1880, p. 266.	Lymphoid cancer.	Mediastinum.	Not stated.	...
62	33	F.	...	Anterior mediastinum.	Eroded sternum. Two nodules under skin, at sterno-clavicular articulation Nodules in breasts and kidneys.	Dyspnœa and swelling of face.	About 7 mos.	Death.	Andrew and Harris. *Med. Times and Gazette*, April, 1876, p. 359.	Scirrhus.	Mediastinum.	Housewife.	...
63	25	M.	...	Anterior mediastinum.	Tumor adherent to lower part of sternum. Involved thyroid and superior portion of pericardium. Lungs œdematous.	Dyspnœa and dysphagia.	9 days?	Death.	Leudet. *Bull. de la Soc. Anatomique.*	...	Not stated.	Restaurateur.	...
64	34	F.	...	Anterior mediastinum.	Affected right breast, ovary and mesenteric glands. Vena cava obliterated (which one not stated). Adherent to lungs.	Lancinating pain in lumbar region.	9 mos.	Death.	Little. *The Lancet.* London, Aug., 1847.	Not stated.	Not stated.	...	...
65	21	M.	...	Anterior mediastinum extended from thyroid to diaphragm.	Adherent to pericardium and pleura.	Cold extremities and dyspnœa.	Not stated.	Death.	Neligan. *Edin. Med. and Surg. Jour.*, April, 1846.	Not stated.	Not stated.	...	...

66	23	F.	...	Anterior mediastinum occupied position of sternum.	Three cysts in mamma; great pectoral muscles destroyed; tubercles in lung; pericardium contained serum.	Cyanosis; base of tumor indurated; absence of respiratory murmur on left side.	18 mos.	Death.	Roussel. *Bull. de la Soc. Anatomique*, 1853, p. 19.	Cystic cancer; colloid.	Not stated.	Not stated.	...
67	55	M.	...	Posterior mediastinum.	Glands at roots of both lungs affected; pressed on œsophagus.	Dysphagia.	Nearly 3 mos.	Death.	St. Bartholomew's Hosp. Reports, XV, p. 273.	Not stated.	Posterior mediastinum.	...	...
68	54	M.	...	Posterior mediastinum.	Left bronchus nearly obliterated, and also the pulmonary artery.	Dyspnœa and lancinating pain.	2 mos.	Death.	Pollock. Trans. Path. Soc. Lond., XIV, p. 19.	Not stated.	Posterior mediastinum.	Not stated.	...
69	20	F.	...	Anterior and posterior mediastinum.	Left lung, ovaries and mesenteric glands.	Mild typhoid state; dyspnœa was extreme.	3 mos.	Death.	Bennett. Trans. Path. Soc. Lond., XVIII, p. 35.	Not stated.	Mediastinum.	Servant.	...
70	39	M.	...	Glands of anterior mediastinum.	Pressed on right bronchus and right pulmonary artery.	Dyspnœa; cough and hemorrhage.	Not stated.	Death.	Church. Trans. Path. Soc. Lond., Vol. XIX, p. 64.	Not stated.	Mediastinum.	...	...
71	36	F.	...	Anterior mediastinum.	Involved innominate and subclavian vein and artery, pleura and lung.	Cough; dyspnœa; œdema of right arm and hand.	Not stated.	Death.	Cayley. Trans. Path. Soc. Lond., XIX, p. 53.	Not stated.	Thymus gland.	...	...
72	12	M.	...	"There existed no mediastinum, neither posticum nor anticum; but this, that the pleuræ came together, and their walls were found attached not only to the lungs, but the ribs."		Cough; pain and dyspnœa.	Not clearly stated.	Death.	Hufeland. *Journal der practischen Arzneikunde*, XXV, p. 187.	Scirrhus.	Not stated.	...	...
73	43	F.	...	Posterior mediastinum.	Affected upper part of left lung, bronchus and trachea, also the pericardium; branches of pulmonary artery compressed; pulmonary veins obstructed.	Dyspnœa; œdema of face, neck and chest; pain in chest, and cough.	9 weeks?	Death.	Peacock. Trans. Path. Soc. Lond., 1850, Vol. II, p. 178.	Not stated.	Lung.	Not stated.	...

No.	Age.	Sex.	Cause.	Area Involved.	Other Parts Affected.	Chief Symptoms.	Duration.	Result.	By Whom and Where Reported.	Variety.	Primary Seat.	Occupation.	Remarks.
74*	40	F.	...	Posterior mediastinum.	Left ovary and lung; reduced calibre of left pulmonary artery; left bronchus obliterated.	Dyspnœa; dysphagia; pain over sternum on percussion; right radial pulse stronger and fuller than left.	3 mos.	Death.	Bennett. Trans. Path. Soc., Lond., Vol. VII, p. 49, 1856.	Not stated.	Mediastinum.	Not stated.	...
75	16	M.	...	Anterior mediastinum.	Kidneys and right lung.	Dysphagia and dullness on percussion on right side; dyspnœa.	1 mo.	Death.	Barker. Trans. Path. Soc., Lond., Vol. VII, p. 45.	Not stated.	Mediastinum.	Engineer.	...
76	68	M.	...	Anterior mediastinum.	Right lung cancerous, also the liver and mucous membrane of trachea.	Cough; dyspnœa; œdema of neck, arms and head; dullness on percussion on right side.	3½ mos.	Death.	Trans. Path. Soc., Lond., Vol. XI, p. 31, case III.	Encephaloid.	Mediastinum.	Not stated.	...
77	46	M.	...	Posterior mediastinum.	Spinal cord, eye and lung.	Hemiplegia, numbness and weakness.	...	Death.	Williams. Trans. Path. Soc., Lond., Vol. I, p. 42.	Melanotic cancer.	Spinal cord.	Not stated.	...
78	33	M.	...	Mediastinal glands.	Great vessels of thorax and auricle involved.	Superficial veins enlarged.	...	Death.	Trans. Path. Soc., Lond., Vol. VI, p. 112.	Not stated.	Lung.	Not stated.	...
79	55	F.	...	Posterior mediastinum.	Affected glands on each side of the spine, lung, uterus, liver and bladder.	Pain; cough; thirst.	20 mos.	Death.	Trans. Path. Soc., Lond., Vol, XI, p. 88.	Not stated.	Uterus.	Not stated.	...

* This case is probably identical with No. 14, although the place of reporting is different.

80	78	F.	...	Posterior mediastinum filled.	Pressed on œsophagus and trachea and phrenic nerve.	Cough; pain and œdema.	About 3 mos.	Death.	Hanot. *Arch. gén. de méd.*, 6 scr., XXIX, p. 476. Avril, 1877.	Not stated.	Not stated.	Not stated.	...
81	29	M.	Caught cold.	Anterior mediastinum.	Involved left brachio-cephalic vein, common carotid and left subclavian; small growths on outer side of ventricle.	Cough; pain in chest; œdema of left arm; anorexia; pain in epigastrium; swelling of face and extremities.	7 mos.	Death.	Pedro. *El Siglo Med.*, XX, 1030, Sept. & Oct., 1873.	Not stated.	Probably mediastinum.	Not stated.	...
82	34	M.	...	Posterior mediastinum.	Extended down vertebræ nearly to promontory of the sacrum; lungs riddled with abscesses. Involved liver; also empyema; diaphragm so diseased that its fibres could not be distinguished.	...	...	Death.	*North American Med.-Chir. Review*, 1860, also in *London Lancet*, Dec., 1860.	Encephaloid.	Mediastinum.	Not stated.	...
83	45	F.	...	Posterior mediastinum.	Pressed on left recurrent laryngeal nerve; surrounded œsophagus, descending aorta and trachea at bifurcation.	Dyspnœa and disturbances of respiration other than dyspnœa.	...	Death.	*Glasgow Med. Jour.*, Jan. 1879, p. 27.	Not stated.	Mediastinum.	Not stated,	...
84	36	F.	...	Entire thorax.	Entire thorax.	Pain in chest; recurring pleurisy.	About 5 years.	Death.	J. Cockle. Trans. Path. Soc., Lond., 1857, Vol. VIII, p. 63.	Encephaloid.	Not stated.	Not stated.	...
85	31	M.	...	Middle mediastinum.	Pleura and pericardium.	...	...	Death.	Laverau. *Gazette de Paris*, 9, 1857.	Not stated.	Pericardium.	Not stated.	...
86	23	F.	...	Anterior mediastinum.	Absorbed sternum, affected lungs, heart and trachea.	Cough; dyspnœa; dysphagia; aphonia.	7 mos.	Death.	Holmes. Trans. Path. Soc., Lond., Vol. IX, p. 29, 1857.	Encephaloid.	Heart and lung.	Housewife.	...

No.	Age.	Sex.	Cause.	Area Involved.	Other Parts Affected.	Chief Symptoms.	Duration.	Result.	By Whom and Where Reported.	Variety.	Primary Seat.	Occupation.	Remarks.
87	20	M.	...	Anterior mediastinum.	Pericardium, trachea, bronchial glands, œsophagus and arch of aorta were included in mass.	Anasarca of lower limbs; debility; thirst; yellow tinge of skin.	Probably many years.	Death.	J. Cockle. *Med. Times and Gazette*, Sept. 4th, 1858.	Scirrhus.	Not clearly stated.	Pianoforte maker.	...
88	Not stated	M.	...	Anterior mediastinum.	...	...	8 days?	Death.	Jaccoud. Leçons de Chir. Med. faites á l'hôpital de la Charité.	Encephaloid.	Mediastinum.	Railway porter.	...
89	15	M.	...	Anterior mediastinum.	Involved lung, blood vessels and bronchi; also the pericardium.	Dyspnœa; dry cough; pain in chest.	3 or 4 mos.	Death.	Wunderlich. Handbuch der Path. und Ther., III. Bd. 2, p. 673.	"A white cartilaginous cancerous mass."	...	...	...
90	20	M.	Exposure.	Anterior mediastinum.	Pressed on superior vena cava; greatly obstructed azygos vein.	Pain near right shoulder blade; lividity of face.	5 mos.	Death.	Murchison. Trans. Path. Soc. London. Vol. x, p. 240.	Not stated.	Mediastinum.	Printer.	...
91	40	F	...	Anterior mediastinum.	Tumor attached to trachea and aorta.	Œdema of face and cough.	Seen for 2 mos.	Death.	Adams. *Arch. gén. de méd.* Ser. III, tom. IX, 1840.	Not stated.	Mediastinum.	...	...
92	26	M	...	Anterior and middle mediastinum.	...	Anorexia and pain.	Not clearly stated.	Death.	Paulsen. Hosp. Tidende 22, 23, and 24, 1862.	Not stated.	...	...	...
93	48	F.	...	Anterior mediastinum.	Glands all through the body cancerous.	Dyspnœa; œdema of feet, left arm and hand.	About 18 mos.	Death.	St. Bartholomew's Hosp. Reports, 1867, p. 139, 16 lines from bottom of page.	Not stated.	Breast.	Dressmaker	...

94	...	...	...	...	...	...	...	...	*Dub. Jour. Med. Sci.*, Sept., 1878, p. 254.	...	...	...	...
95	30	M.	Heavy lifting.	Whole of upper part of thorax.	Left lung and pleura involved; also liver and pancreas.	Chest and arms are œdematous.	2 mos.	Death.	Biennial Retrospect of Med. and Surg., 1871-1872, p. 111.	Not stated.	Mediastinum.	Mason.	...
96	15	M.	Caught cold.	Anterior mediastinum; entire right side of chest.	Eroded upper ribs; adherent to sternum and costal pleura.	Dyspnœa and croupy, cracked cough; pain between scapulæ.	About 3 mos.	Death.	Burrows. *Med. Times and Gaz.*, June 7th, 1851; also *Lond. Jour. of Med.*, July, 1851.	Soft cancer.	Mediastinum.	...	...
97	26	F.	...	Entire mediastinum.	...	Orthopnœa; œdema; congestion of upper part of body.	2 mos.	Death.	Burrows. *Med. Times*, June 7th, 1851; also *Lond. Jour. of Med.* July, 1851.	Medullary cancer.	Not stated.	...	...
98	...	...	...	Retro-pleural tumor.	"Lymph and glandular system."	...	...	Death.	Lobstein. Lehrbuch der Path. anat. deutsch von Neurohr, 1835, Bd. I, S. 386.	"Cancröse thorax massen."	...	...	...
99	23	M.	...	Posterior mediastinum between aorta and vertebræ.	Involved lungs, diaphragm and right pleura.	Symptoms of pleurisy with effusion.	9 mos.	Death.	Malmsteus. Hygeia Sv. lak. sällsh. Förk, p. 119.	Medullary cancer.	Not stated.	...	...
100	35	M.	...	Chiefly in middle mediastinum.	Right lung and pleura cancerous; glands cancerous in chest.	Cough; headache; fever; neuralgia in arm and fingers of right side.	About 5 mos.	Death.	Behier. *Gaz. de hôpitaux*, 1867, No. 45.	Not stated.	Lung.	...	...
101	35	M.	...	Anterior mediastinum.	Aorta, pulmonary artery were enveloped; azygos vein dilated by obstruction.	Insomnia; anorexia; vomiting; œdema of arms; dyspnœa.	2 years.	Death.	Suzanne. L'Abeille Médicale. Vol. III., 1884, p. 308.	Not stated.	Lungs?	Restaurateur.	...

No.	Age.	Sex.	Cause.	Area Involved.	Other Parts Affected.	Chief Symptoms.	Duration.	Result.	By Whom and Where Reported.	Variety.	Primary Seat.	Occupation.	Remarks.
102	27	M.	...	Whole mediastinum; chiefly the anterior.	Adherent to sternum. Pericardium, aorta, pulmonary arteries are involved; also kidneys and stomach.	Left pupil smaller than the right; thoracic veins prominent; cough.	3 years.	Death.	Horstmann. Inaug. Dissertation, Berlin, 1871.	"Virchow's sarcoma carcinomatosum."	Probably in remains of thymus.	Bookkeeper.	...
103	22	M.	Not stated	Anterior and posterior mediastinum.	Tumor adherent to right lung, which surrounded the blood vessels and attached itself to pericardium; diaphragm and right lung were affected.	Cyanosis and dyspnœa; fever and cough, which was dry.	5 mos.	Death.	Horstmann. Inaug. Dissertation, Berlin, 1871.	Not stated.	Anterior mediastinum.	Soldier.	...
104	Adult	F.	...	Upper part of anterior mediastinum.	Right lung adherent to pleura; small tumor on jugular vein; involved vagus and recurrent laryngeal; thrombosis of subclavian.	Face cyanotic; extremities œdematous; both jugulars swollen; dyspnœa.	4 years and 2 mos.	Death.	Eger. *Arch. f. Klin. Chir.*, XVIII, p. 498, also Ueber Path. Mediastinaltumoren.	Not stated.	Not stated.	Widow.	...
105	4	M.	...	Anterior mediastinum.	All the abdominal contents.	Anorexia and wasting.	"A few weeks."	Death.	C. Ferrall. *Dublin Jour. Med. Sci.*, Aug. and Nov., 1846, p. 510.	Encephaloid.	Not stated.	...	...
106	45	M.	...	Posterior mediastinum.	Involved pleura and right vagus, œsophagus and glands of thorax. Gangrene of right lung.	Pain in right side; no cough; sunken right thorax.	8 days. (?)	Death.	Gull. Guy's Hospital Reports, 3 Ser., V, p. 307, also Schmidt's Jahrbücher 113, p. 308	Not stated.	Not stated.	...	...

107	12	F.	...	Anterior and postcrior mediastinum.	Pleura, lungs, thoracic glands and kidney.	Cough, pain and dyspnœa; health good.	Several years.	Death.	Gross. *Phila. Med. Times*, 1879, IX, p. 291.	Scirrhus.	Brcast.	...	...
108	56	M.	...	Anterior mediastinum.	Liver cancerous; also both layers of the pleuræ.	Bronchial cough; pleural effusion; dyspnœa and pain.	About 3 mos.	Death.	Pepper. Trans. Path. Soc. Phila., VII, p. 71.	Encephaloid.	Mediastinum.	"Gentleman."	...
109	40	M.	...	Anterior and posterior mediastinum.	Right bronchus compressed; œsophagus and descending thoracic aorta embraced bygrowth; pleural effusion on right side.	Dyspnœa; dysphagia and huskiness of voice.	About 2 years.	Death.	Pepper. *Phila. Med. Times*, Jan. 4th, 1879, p. 162.	Not stated.	Mediastinum.	Blacksmith.	...
110	43	M.	...	Glands mediastinum.	Disease of stomach and liver, abscess formed, which burst into œsophagus and lung and caused gangrene.	Hemoptysis.	Not stated.	Death.	Satterthwaite. *N. Y. Med. Record*, vol. II, p. 103, 1880.	Not stated.	...	Laborer.	...
111	50	M.	Syphilis.	Entire mediastinum.	Pressed on œsophagus and included thoracic duct.	Wasting and emaciation.	4 mos.	Death.	Stone. *Medical Times and Gaz.*, 1879, II, p. 422.	Scirrhus.	Not clearly stated.	Messenger.	...
112	64	M.	...	Mediastinum	Lungs studded with cancer and tuberculous looking spots.	Cough, mucopurulent expectoration; cachexia: dyspnœa and dysphagia.	Some months.	Death.	Cockle. Intrathoracic Cancer. London, 1865, p. 105.	Encephaloid.	Lungs.	Accountant	...
113	23	M.	...	Anterior mediastinum.	Involved pericardium; reached into posterior mediastinum; surrounded vena cava and innominate veins; trachea and bronchus decreased in calibre.	Dyspnœa; œdema of eyelids and thirst.	About 4 mos.	Death.	Cockle. Intrathoracic Cancer. London, 1862, p. 121.	...	...	Butler.	...

No.	Age.	Sex.	Cause.	Area Involved.	Other Parts Affected.	Chief Symptoms.	Duration.	Result.	By Whom and Where Reported.	Variety.	Primary Seat.	Occupation.	Remarks.
114	...	M.	...	Anterior mediastinum.	...	...	...	Death.	Hughes. Path. Soc., Phila., Trans. 1887.	...	Stomach.	...	...
115	40	M.	...	Middle mediastinum.	Glands at bifurcation of trachea.	...	...	Death.	Langhans. *Virch. Archiv*, Bd. 53, S. 470.	...	Mediastinum.	...	...
116	37	M.	...	Anterior mediastinum.	Glands of anterior space.	Oppression and dyspnœa.	...	Death.	Feinberg. *Berliner Klin., Wochen.*, 1869, No. 42.	...	...	...	...
117	43	F.	...	Anterior mediastinum.	Pleural cavity on left side filled with serum; tumor attached to pericardium.	Rapid pulse; œdema of lower extremities; lividity of face; glands of neck swollen.	A few weeks.	Death.	Cobet. Dissertation, Marburg, 1870.	...	Mediastinum.	...	...
118	Adult.	...	...	Middle mediastinum.	Vena cava superior compressed and obliterated.	Dyspnœa and oppression; disordered circulation.	...	Death.	*Canstatt. Jahresbericht*, 1866, Bd. II, p. 81; Thèse de Paris.	...	Mediastinum.	...	...
119	51	M.	...	Posterior mediastinum.	...	Dyspnœa and cardiae distress.	...	Death.	*Presse Med.*, No. 12, *Canstatt. Jahresbericht*, 1867, Bd. I, p. 291.	Encephaloid.	...	...	...
120	...	...	...	Posterior mediastinum.	Pressed on œsophagus.	...	...	Death.	Heller. *Canstatt. Jahresbericht*, 1868, II, p. 82.	...	...	...	...

121	73	M.	...	Anterior and middle mediastinum.	Involved vena cava superior and the left lung and pleura in the origin of the great blood vessels; the aorta and the mesentery are also involved.	Intense dyspnœa and cardiac palpitation.	Seen for 19 days.	Death.	Pernice. *Pisani Palermo*, 1884, V, 5-31, 3 pl.	...	Mediastinum.	...	...
122	...	...	...	Anterior mediastinum.	...	...	...	Death.	Eck & Rudneff. *Med. Vestnik*, St. Petersburg, 1868, VIII, 175.	...	...	...	...
123	...	...	...	...	...	...	...	Death.	Bellouard. Bull. de la Soc., Anat. de Nantes, 1878-79. Paris, 1879, II, p. 73.	Encephaloid.	...	...	...
124	57	M.	...	Posterior mediastinum.	Thoracic duct was cancerous; left leg œdematous; lungs adherent to growth; melanosis of bronchial glands.	...	Not stated.	Death.	Weigert. Arch. f. Path., Anat., etc., IX, p. 387, 1880.	...	...	Cigar maker	...
125	25	M.	...	Middle mediastinuum.	Large tumor of lung; extended across the aorta, attached to the pericardium, and extended up the clavicle.	Oppression; enlarged veins on chest; congestion of the face; asphyxia; cyanosis.	Seen for 4 mos.	Death.	Aubry, Henri. Thèse de Paris. Contribution a l'etude des tumeurs malignes du mediastin. Paris, 1881.	Encephaloid.	Lungs.	Soldier.	...
126	29	M.	...	Middle mediastinum.	Extended into right lung; right vagus involved; tumor extended into the neck.	Dyspnœa and pain in the epigastrium; aphonia and hemoptysis.	3 mos.	Death.	Charteris. *Lancet*, London, Vol. I, p. 126, 1874.	Not stated.	Mediastinum.	Stoker.	...
127	44	M.	...	Middle mediastinum.	Tumor projects into trachea at bifurcation; also into main bronchi; involves right lung.	Cough; shortness of breath; dysphagia; left vocal cord paralyzed.	13 weeks.	Death.	Charteris. *Lancet*, London. Vol. I, p. 583, 1874.	Not stated.	Mediastinum.	Engineer.	...

No.	Age.	Sex.	Cause.	Area Involved.	Other Parts Affected.	Chief Symptoms.	Duration.	Result.	By Whom and Where Reported.	Variety.	Primary Seat.	Occupation.	Remarks.
128	29	M.	...	Mediastinum.	Lung involved.	Œdema of face; enlarged veins of chest; dyspnœa and pain on full inspiration; cough	10 weeks.	Death.	Pfaff. *Gaz. méd. de Paris*, p. 209, 1850.	Encephaloid.	Mediastinum.	...	...
129	44	F.	...	Entire mediastinum.	Pericardium contained sero-sanguinolent fluid; tumor surrounds trachea, pulmonary veins and arteries; adherent to left lung.	Hemoptysis; pain in chest.	Seen for 6 days.	Death.	Rendu. Soc. Anat. le Progres Medicale, 1874, p. 627.	Encephaloid.	Mediastinum.	Glove maker.	...
130	26	M.	...	Mediastinum.	...	Lividity of face; pain in chest; mucous expectoration.	...	Not known.	Cobet. Inaug. Dissert. Marburg, 1870.	Not stated.	...	...	...
131	41	M.	...	Middle mediastinum.	Secondary deposits in lungs; encircled aortic arch and extended upward by the side of trachea; also downward.	Cough; dyspnœa; pulsation of cervical veins; emaciation; percussion is dull over sternum.	Long time	Death.	Thompson. *Medical Mirror*. Lond., 1865.	Not stated.	Probably mediastinum.	Painter.	...
132	17	M.	...	Anterior mediastinum.	Attached to upper surface of diaphragm; surrounded trachea and roots of lungs; adherent behind to chest wall.	Dyspnœa; dullness over entire side on the left; cyanosis.	Seen 9 weeks.	Death.	Thompson. *Medical Mirror*. Lond., 1865.	Scirrhus.	Mediastinum.	...	Tumor size of fist.

133	45	M.	...	Middle mediastinum.	Bifurcation of trachea enveloped in mass of hard cancerous material; also involved aortic arch, œsophagus.	Dysphagia.	About 12 mos.	Death.	Thompson. *Medical Mirror.* Lond., 1865.	...	Mediastinum.	...	..
134	Adult	M.	...	Anterior mediastinum.	Projected through sternum and intercostal spaces.	Produced a train of pressure symptoms.	Not mentioned.		Thompson. *Medical Mirror.* Lond., 1865.	...	Mediastinum.	German Professor.	...

Carcinoma of the mediastinum has, by most writers, been thought to be less frequent in occurrence than other malignant lesions, and some authorities even go so far as to state that primary cancer of this area is almost unheard of. The statistics collected in this essay, however, seem to overthrow both these doctrines, and while the results reached from an analysis of the cases are not perhaps sufficient to overthrow any such generally accepted belief, the fact that cancer of the mediastinum is by no means rare, even when it has its primary seat in this space, cannot be gainsaid.

While some writers believe that the mediastinum is seldom occupied by growths of any kind, others go even further, and state not only this, but more, namely, that carcinoma, sarcoma and lymphoma are the only growths occurring in this region. Powell, in "Reynolds' System of Medicine," while favoring the view that primary cancer is rare, nevertheless is forced to the conclusion that it has occurred, and therefore may occur again; and though he makes this concession, he states that in his opinion many of the cases heretofore called cancerous were in reality sarcomatous, and that each year decreases the number of such cases reported, with an increase in the number of sarcomata.

Whether he is correct in making this assertion is, to say the least, doubtful, particularly as he brings no evidence whatsoever to support his claims. Again he says, in the same article, that even as a secondary growth cancer is rare in this position, except in those instances in which it travels inward from a cancerous breast, and the writer cannot help feeling that this statement is incorrect.

Whatever may be the true etiology or pathology of mediastinal cancer, or cancer for that matter anywhere in the body, whatever theories grounded on a sound or unsound basis, may exist as to the regions and tissues which this disease may involve, that great test of all theory, practical experience, certainly has taught us that cancer may occur in several of the mediastinal tissues and organs and frequently does so occur, and further, that when one attempts to analyze the contents

of this space he finds tissues which cancer elsewhere delights to attack.

Too frequently the mediastinum is regarded as an organ, or as a space possessing but one variety of differentiated protoplasm, and too frequently one hears a growth occurring in this region spoken of as mediastinal instead of glandular or pleural. Nothing can be more important for the future value of clinical history on this subject than an avoidance of the habit of speaking and writing of this space as if it were an organ in itself. It may be due partly to this pernicious habit that our literature on the subject is so confused and unreliable, and that equally eminent observers state opinions diametrically opposed to each other.

Thus Burrows,* in a clinical lecture on the more important diseases of the anterior mediastinum, states that he believes tumors occurring in this region to be nearly always carcinomatous, while Hertz† partially agrees with him in his conclusions, stating that the greatest number of mediastinal tumors are either carcinomatous or sarcomatous, placing cancer first. Such has certainly been the experience of the writer in his searching for reports of cases, both as regards primary and secondary mediastinal growths; and though men may say that in their opinion our present list of cases of cancer is incorrect, owing to faulty diagnosis, they are but taking away the ground on which we may at least raise a temporary structure without giving us aught with which to replace it. From our present standpoint we must certainly come to the conclusion that cancer of the mediastinum is the most common malignant disease affecting this region, and that until further evidence to the contrary is adduced we must so regard and teach it.

Whatever may be the variance of opinion on this subject, there can be no doubt as to that form of carcinoma which most frequently attacks this area. Almost every writer on the subject

* *Medical Times*, June 7th, 1851.

† "Cyclopædia of the Practice of Medicine," Ziemssen. Vol. v, p. 446.

agrees as to this matter; and while the opinion drawn from an array of cases reaching back over many years may not give us information reliable enough for absolute acceptance, owing to the chances of laxity as regards nomenclature, the statistics reached, after analyzing the cases here reported, are at least interesting.

Unfortunately, only forty-seven of the hundred and odd cases have any statement as to their variety, and a still smaller number speak of the primary seat; but of these forty-seven cases we find that thirty-two were medullary, thirteen scirrhus, and two colloid. Of the medullary cancers, fifteen are noted as primary, two as secondary, and in fifteen the primary seat is not stated. Of the scirrhus, one is noted as primary, three as secondary, and in nine nothing whatever is said as to their point of origin.

The same degree of coincidence of opinion does not exist, unfortunately, as to the position or division of the mediastinum in which cancer most frequently occurs. Thus Bruen* asserts very positively that one of "the special pathological characteristics of cancerous growths is that they exist most frequently in the posterior mediastinum," while Hertz appears to rather favor such a view, although he by no means makes a statement to that effect, merely mentioning this area first in the list. Risdon Bennett† virtually states that they appear in equal numbers in the anterior and posterior spaces, and thereby takes a middle stand, mentioning those cases which arise in the area occupied by the great blood vessels, etc., as the third point of origin in respect to frequency. The writer is forced to take a stand absolutely opposed to that maintained by Bruen, and considerably beyond that held by Bennett, for in his collection of cases the proportion is three to one in favor of cancer occurring in the anterior mediastinum alone, while this lead is considerably increased if the cases starting from the anterior mediastinum and penetrating the other mediastinal spaces be taken into consideration. Out of one hundred and seven cases

* "Amer. Sys. Practical Med.," Pepper. Vol. III, p. 870.

† Quain's "Dict. of Med.," Art., Mediastinum.

collected by the author in which a distinct statement as to the area involved was made,

48	occurred	in	the	Anterior Mediastinum	alone.
20	"	"		Posterior "	"
8	"	"		Whole "	"
8	"	"		Anterior and Middle Mediastinum	alone.
14	"	"		Anterior and Posterior Mediastinum	alone.
2	"	"		Posterior and Middle Mediastinum	alone.
2	"	"		Whole Thorax.	
5	"	"		Middle Mediastinum	alone.

It may be taken as decided, therefore, that the anterior mediastinum is more frequently the seat of carcinoma than the posterior or middle areas, and this conclusion carries more importance with it than is at first conceived, since, according to Bruen, growths attacking the posterior mediastinum produce interference with respiration by pressure, and that under such circumstances we should look particularly for cancer, as, in his opinion, it would be the most likely growth.

The tissues in which cancer may arise in the mediastinum are exceedingly numerous; indeed, those which it does not attack can scarcely be mentioned. Undoubtedly the lymph glands at the base of the neck, or those which accompany the trachea and bronchi, are frequent seats for its beginning, and in quite a large class of cases a persistent thymus seems to afford a nidus, particularly for a growth in the anterior mediastinum. Virchow insists quite strongly on this point. The lymph tissues at the root of the lungs, the pericardium and sub-pericardial connective tissue, the periosteum of the sternum, the fat and connective tissue of the mediastinum, and, last of all, the adventitia of the blood vessels may give rise to the growth. The lung tissues themselves may also, and do frequently, develop cancerous tendencies, and the mediastinum is frequently filled by a tumor projecting from a lung, or by metastasis to the tissues of the area itself.

Malignant growths, be their variety what it may, have certain peculiarities as to their development when in the mediastinum which they do not possess elsewhere, at least to so marked a degree. For example, mediastinal cancer does not confine itself

as a general rule to any one or two tissues, but makes its onward march, involving whatever may come in its path; and quite a large number of instances of this character may be seen in the tables of cases where, after death, it was found that almost every organ in this region had fallen a prey to the disease.

The rapidity of development of mediastinal cancer varies so greatly in different cases that no fixed law can be laid down concerning it, other than that the rapidity depends upon the nature of the growth; medullary or soft cancer progressing rapidly, while scirrhus develops slowly. Their spread, naturally, is in direct ratio with the rapidity of growth, the hard nodular tumor remaining, as a rule, very circumscribed, while the softer variety spreads itself over a considerable area, and it is these cancers which produce the most marked and distressing symptoms; as a general rule, the symptoms differing according to the location of the growth. Thus cancers, or other growths, starting in the anterior mediastinum, pass naturally in the direction of least resistance, namely, backward, and involve the pericardium and lungs, on which they press, as well as the heart, which is very generally displaced.

As the growth progresses, it affects each organ as it reaches it, frequently pressing on both vena cava and the various divisions of the aortic arch. The innominate, jugular, and subclavian veins, the pulmonary and other arteries, are all in turn either embraced by the growth or become cancerous themselves. The œsophagus frequently suffers as well as the trachea, and cases have been noted very frequently in which perforation from pressure or disease occurred in one or both of these tubes by mediastinal malignant growth. Nerve filaments are no sooner involved than a series of various phenomena assert themselves, often ending in death, when important nerves, such as the vagus, are much affected.

The diaphragm may be pushed downward and the ribs and sternum altered in form and shape, the chest outline becoming distorted and irregular.

Passing from the discussion of the pathology of mediastinal

cancer to its etiology, we find ourselves at once confronted with a task of no small difficulty, for we are brought face to face with the ever recurring questions which are so constantly vexing the pathological mind, and which, unfortunately, seem to be as far from solution as ever.

A discussion of the etiology of any form of cancer, be its seat where it may, is useless, and would lead us to no firmer ground than if we passed it by. "The etiology of mediastinal cancer is therefore unknown," to use the expression of Hertz, so far as its true production is concerned.

Aside from any influence which heredity or other like cause may exert, there exist the numberless causes assigned by the sufferers themselves, which, while they are, in a very large proportion of cases unreliable and unlikely, certainly seem to have given origin to growths, as by a blow on the chest, or taking cold, or some other similar accident. But these cases do not belong peculiarly to this disease, and probably in most instances only acted as an exciting cause or brought on the conditions favorable to the development of the growth.

Fortunately, our knowledge in other matters connected with the etiology of this interesting affection is a little more widespread, and while no one, so far as the writer is aware, has drawn any conclusions as to the frequency of these cancerous tumors of the mediastinum, in either sex, the statistics collected by Bennett, Eger and Riegel, in regard to mediastinal growths in general, point to a large preponderance of males over the females, and an analysis of the cases here recorded shows that the conclusions reached by these observers, as regards the subject in general, apply equally well to cancer alone, the proportion being as two to one.

A scarcely less interesting point arises as to the influence of age on their occurrence, and a second reference to the accompanying tables shows that in both sexes the age most subject to this disease is between thirty and forty years, or, to speak more accurately, in males it is most frequent at 37.7 years of age, and in females at 36 years. To express it still more accurately, in 61 male cases we find 1 case between 1 and 10 years, 6 cases

between 10 and 20 years, 17 cases between 20 and 30 years, 18 cases between 30 and 40 years, 15 cases between 40 and 50 years, 5 cases between 50 and 60 years, and 4 cases between 60 and 70 years. In thirty-one female cases, 4 were between 10 and 20, 6 between 20 and 30, 6 between 30 and 40, 10 between 40 and 50, 4 between 50 and 60, and 1 between 70 and 80 years.

Pless * and Eger,† in another analysis of *general* mediastinal disease, arrived at results virtually similar to those given, for Pless, out of twenty-five cases, found eleven between 20 and 30, and the next highest number between 30 and 40 years. Eger found 1 case below 10 years, 5 cases between 10 and 20, 16 between 20 and 30, 13 between 30 and 40, 9 between 40 and 50, 6 between 50 and 60, and 5 at the age of 60.

Whatever differences exist between the results of these observers and those of the writer are due in all probability to the fact that their analyses included all growths, such as lymphomata and kindred lesions, which occur at earlier portions of a lifetime than do the more malignant tumors, as a general rule.

The SYMPTOMATOLOGY of mediastinal cancer is by no means clear and well defined, since so many other conditions may produce signs of the same character, and it has been stated very positively by certain writers that such a growth cannot be diagnosticated during life.

Although this assertion seems rather sweeping, there is, nevertheless, some truth in it, and in many cases, where we have no history to guide us and no evidence of cancer elsewhere, the diagnosis may be well nigh impossible. Even the diagnosis of any mediastinal growth is difficult enough without any more minute division of the lesion, for each and every growth, be it benign or malignant, produces in general not symptoms peculiar to itself, but peculiar to its position and the organs which it involves. Small cancerous nodules occupying areas possessing no special function may remain almost unnoticed for years, if their growth be slow, while even smaller nodules situated in some more vital

* Inaug. Dissert., Göttingen, 1867.

† Dissert., "Zur. Path. der Mediastinaltumorem."

spot may produce the most severe and dangerous symptoms, and give rise to the impression that a growth of considerable size occupies the area apparently involved.

Large tumors are frequently found, in the anterior mediastinum particularly, which have not been diagnosticated or suspected until a post-mortem had been made, not from any lack of ability on the part of the physician, but because the symptoms of mediastinal disease have either been entirely absent or masked by others of more importance elsewhere. Thus in a case recently reported by Bruen, an old woman, aged seventy years, entered the Philadelphia Hospital with decided symptoms of renal disorder, which in a few days caused her death. Although an examination was made of the chest, as a mere matter of routine duty, no special physical signs were discovered, and the disease, which was sarcoma in the anterior mediastinum, was not discovered till the body was placed on the post-mortem table. The only symptoms of such a condition of affairs before death consisted in slight dyspnœa and cough, both of which were supposed to arise from the renal lesions; and this is the more remarkable, since the growth weighed fourteen ounces, was six inches long by five inches broad and four inches in diameter, or, in other words, was about the size of a normal adult heart. No signs of sarcoma existed elsewhere in the body from which one might suspect any malignant disease.

The symptoms first complained of by the patient vary quite as much as do the later ones, and depend in the same manner, as do their successors, on the parts most involved. By far the largest number of sufferers notice some interference with respiration, particularly on exertion, which soon increases, so that there may be constant dyspnœa, and even attacks of partial suffocation. Death may come without any other symptoms asserting themselves, or, as is most generally the case, the lancinating pain of cancer appears to increase the suffering of the unfortunate being, while, in some cases, this is the first and only sign of mediastinal disease.

In a typical case the history consists, first, in the advent of

dyspnœa, with sudden attacks of syncope, during which the patient may become either livid or deathly pale, with the lancinating pain in the chest, so characteristic of cancer everywhere; vertigo comes on whenever the sufferer stoops; there may be bleeding at the nose; cough, with or without expectoration; the voice may become shrill and cracked, or absolute aphonia may develop itself. Headaches of a most violent type may add to the patient's misery, while dysphagia, vomiting, or œsophageal regurgitation aid in diminishing his strength and general vitality.

Roarings in the ears, probably due in many cases to impeded venous circulation in the great veins, phosphenes before the eyes, and, in some cases, total amaurosis and deafness, may come on. Palpitation of the heart, with violent attacks of cardiac neuralgia, simulating angina pectoris, frequently becomes one of the most alarming and distressing symptoms; the face becomes leaden or livid in hue, while œdema of the neck and face soon render the sufferer unrecognizable even to his most intimate friends. The superficial veins of the neck, chest and head show by their intense engorgement the degree of impeded thoracic circulation.

Rarely the man dies from cancerous cachexia, sometimes from metastasis to vital organs, but more frequently from asphyxia or failure of vital force, owing to the interference with the swallowing and assimilation of food. Any one of the external symptoms may be unilateral or bilateral, even to cyanosis of one side of the face. The pulse in the right and left radial artery is very generally different as regards force and fullness, and the chest walls on one side may be much more sunken or distended than is normal. The dyspnœa and other disturbances of respiration are in many instances due to several rather than to any single cause, since, in addition to the mechanical pressure by the growth on the air passages, we may also have such interference with the circulation of the blood, particularly in the thoracic veins, that pleural, pericardial or mediastinal effusions of serum may occur.

Thrombi often form under such circumstances, and in one case of this character, quoted by the writer in the accompanying

tables, symptoms of cerebral embolism from such formations asserted themselves. Effusions into the abdomen may occur, owing to involvement of the ascending vena cava, but such a condition is, for some reason, rather rare, probably owing to the fact that the ascending cava more frequently escapes than does the descending. Dropsy of the lower extremities, without abdominal effusion, sometimes comes on, and an explanation of this fact is somewhat difficult, unless we have distinct evidence of localized venous obstruction, due to thrombi or emboli. Œdema of one or both arms is very frequent where the growth occupies areas near the blood vessels, and distention of the heart on the right side, with corresponding starvation of the systemic circulation and lungs, may ensue, due to pressure on the pulmonary artery.

In still another class of cases the pulmonary vein may be obstructed, and œdema of the lung itself may be developed. Hypostatic congestions are by no means rare, the patient often being forced, by cardiac weakness, pleural effusion or pressure on the trachea, to lie in one position. In some cases loud venous murmurs can be heard in the jugular and other large superficial veins, and care has to be exercised as to the diagnosis of the true cause of the distress. The ribs and sternum may undergo gradual ulceration and destruction from pressure, and the growth at last appear on the surface of the body.

In a certain number of cases the nerves of the thorax seem to be more affected than the rest of its contents, and involvement of the vagi or the recurrent laryngeals may bring on a long train of obscure and dangerous symptoms, both as regards the circulation, respiration, digestion, speech and swallowing. Thus, pressure on the recurrent laryngeal may cause ennervation of the posterior crico-arytenoid muscle, so that the glottis remains closed, or partially closed, during inspiration. Pressure on this nerve also may alter the voice or destroy it, while involvement of the vagus may retard the cardiac action by irritating that nerve, or render it exceedingly irregular or rapid by palsy from the pressure. Again, vomiting, singultus and dysphagia may be due to this

same cause, and, in the opinion of Skoda, such a condition of affairs is generally the case.

Disorders of vision depend on several causes, such as impeded circulation, nervous involvement or an action on the sympathetic nervous system.

Thus, Rossbach records three cases in which a most interesting symptom asserted itself, namely, certain changes in the pupil, which he attributed to irritation of the vagus nerve. In one patient, in whom the right pupil was smaller than the left, at the beginning of inspiration there occurred a pretty strong bilateral dilatation of the pupils, which increased as inspiration went on, but ceased at the beginning of expiration, returning rapidly to normal. This only occurred when the dyspnœa was severe and the light moderately strong and not excessive.

He also found that firm pressure on the tumor about the clavicle notably dilated the pupils until the iris was only a narrow band, and at the same time the pulse became weaker, slower and smaller. In his second case pressure on the tumor produced mydriasis, but the pulse became rapid; while in the third case deep inspiration produced dilatation in both eyes, although ordinarily the left pupil was as small again as the right.

A very interesting and valuable point, as to the symptoms of mediastinal cancer, is the condition of bodily temperature, which, as a general rule, is a fraction of a degree lower than normal, although a still more marked lowering of temperature is present in certain cases.

The *physical diagnosis* of this disease is perhaps best considered by taking up the points of differential diagnosis between cancer of this space and the other diseases which affect it or contiguous areas. Indeed, there exists no special physical sign of cancer of the mediastinal space in the truest sense of the word; and unless we possess some history of a past condition which points to cancer, its diagnosis, as has already been said, is accomplished only with the greatest difficulty. Much that is said here must also apply to any mediastinal growth. Naturally, the first questions presenting themselves to

the physician, as soon as he thinks the patient is suffering from any such disease, are, where is the growth, if growth it be, situated, and to what variety of morbid process does it belong, and he must, of course, answer the first question before attempting the solution of the second. The symptoms which should attract his attention to the possibility and probability of a lesion occurring here have already been gone over so thoroughly that their repetition in this place would be superfluous, but it should be remembered that they are frequently the only points which we can grasp, as percussion and auscultation oftentimes yield no results whatsoever.

It should not be forgotten that just so soon as a tumor reaches the chest wall and presses on it, just so soon do we have loss of vocal fremitus; and although this fact also obtains in pleural effusion, percussion will frequently show that the muffling agent only touches the chest walls over a limited area.

While vocal fremitus is decreased or lost, auscultation shows that the heart sounds are transmitted far beyond their normal distance, particularly if the growth exist in the upper and anterior portion of the mediastinum. If an examination be made during an attack of dyspnœa, which is, however, hardly practicable, there will probably be heard loud tracheal sounds; or tubular breathing with ronchi will be heard over a considerable area. With the return to normal respiration these tracheal sounds diminish, until only a few scattered râles can be recognized. Palpation sometimes is rewarded by the sensation of a double cardiac impulse, while inspection and mensuration show us unequal enlargement of the two sides of the chest, or bulging of the sternum or ribs in variable spots, or to a variable extent. The intercostal spaces over the tumor are widened and flattened and fail to move on inspiration or expiration. If the tumor encroach more on the one side than the other, and become adherent to the chest, the space between the median line and nipple is increased on that side. These signs occur only in those cases where the growth is large enough to reach to the chest walls, and any tumor having the middle mediastinum for its seat is very

obscure in its signs unless it grow to large proportions. Disease of the posterior space is also obscure, owing to the thick and unyielding chest walls.

Swellings which pulsate from transmission of the aortic impulse may appear at the supra-sternal notch, or over the clavicles near the sternum. Mediastinal growths may also cause collapse of a lung by pressure on its air tubes, they may displace the heart backward, downward, or to the left or right side, and since in aneurism little displacement occurs, this may be a valuable point in differential diagnosis. If the physician believes that the bronchial glands are affected, he may auscult the anterior portion of the chest high up, directing the patient to throw his head back as far as he can, when, if these glands are involved, he will hear that peculiar purring sound so characteristic of bronchial glandular enlargement.

Other auscultatory signs of disease of the posterior mediastinum consist in spasmodic, jerky, inspiratory movements. Sometimes the breathing is exceedingly tubular or whistling in character, due to a narrowing of the greater air tubes, while inspiration and expiration may be prolonged or shortened, according to the degree of dyspnœa.

Both in cancer and sarcoma of this space cachexia rarely appears unless the mediastinal growth be secondary, so that the physician should not rely on or look for this sign with any idea of basing a useful conclusion on it. Indeed, in many instances nutrition is exceedingly well preserved, the patient remaining fat and well nourished to the end.

One variety of cases has not as yet been mentioned, either in this essay or to any extent by other writers, namely, those cases in which sudden wasting with great emaciation and loss of strength occur. In the literature of the subject they are comparatively rare, although why they should be so is remarkable. The writer refers to those cases in which a growth, springing in particular from the posterior mediastinal tissues, compresses and occludes the *thoracic duct*, thereby preventing the pouring of chyle, into the circulation. The diseased conditions from which it is necessary we should distinguish mediastinal growths

during life are as follows: 1st. From aneurism; 2d. From abscess; 3d. From pleural effusion, and 4th. From chronic pneumonia. There are several subdivisions of these diseases that might be made, but to all intents and purposes these are sufficient. Pericarditis may perhaps be named as the fifth lesion to be looked out for.

Aneurism in the thorax is sometimes so extremely difficult of absolute diagnosis that but few rules can be laid down for its differential diagnosis from growths in the mediastinum, for aneurism in this region cannot be said to possess any pathognomonic symptoms. The various portions of the aorta in which aneurism occurs make its symptoms different in almost every case, and we are forced to rely more upon general conditions than absolute signs. Thus, if a patient has no direct symptoms of aneurism, and none of those conditions present which we know predispose to such a lesion, such as atheroma of the blood vessels, due to Bright's disease or any other similar cause, or syphilis, rheumatism, or a history of violent exertion or severe toil, we may with a certain degree of assurance look further for symptoms of mediastinal trouble of another sort.

Unfortunately, the most common age for aneurism is much the same as that for mediastinal disease, although mediastinal disease seems to occur more frequently in youths than does aneurism, or, in other words, is scattered over a wider range of years. The pain of aneurism is generally considered to be more violent than that of any other thoracic lesion, but there exists reasonable doubt whether the lancinating pain of cancer in this position does not exceed it. This doubt rests on sufficient basis to prevent one using this symptom as an aid in any way to diagnosis. If the aneurismal sac be large enough to give us a wide area of dullness on percussion, as Dr. Graves has stated, there ought to be an expansile movement. Hæmoptysis is not in any way a differential sign, since in the one case it may be due to aneurismal leakage, and in another from ulceration of small blood vessels by pressure exercised by a tumor, be it aneurismal or malignant, or even benign.

From *abscess* the diagnosis of mediastinal tumors is much more readily made. In the first place, we generally in abscess have a history of traumatism, or, if the case be one of cold abscess, it is generally associated with a history of struma. If the abscess be acute, there is generally the history of pain followed by a chill more or less severe, and fever; or if cold, then we frequently have irregular febrile movements, with long continued anorexia and loss of flesh. Cold abscess, too, is generally in the posterior mediastinum, while acute abscess generally occurs in the anterior space.

Pulsation may frequently occur, owing to the transmission of the aortic or cardiac impulse, and affords no better diagnostic point here than elsewhere. In some cases, where the theory of aneurism is extremely doubtful and the likelihood of abscess extremely probable, an exploratory needle may be used, either through a hole drilled in the sternum or passed between the ribs; but a careful review of the history of the case should certainly always be made and used as a basis from which to draw conclusions.

By far the greatest difficulty may be experienced when we attempt to diagnosticate between *pleural effusion* produced by pleurisy, and pleural effusion produced by mediastinal disease, provided the case be not seen from the first and the history be obscure. If the effusion be not great, we may be able to discern friction sounds produced by the rubbing of the tumor against the chest walls, but if the effusion be large, this sign may not be recognizable. All other methods failing, it would be advisable to tap the chest, and if the fluid drawn be fibrinous, we know it to be inflammatory; while if it be clear and limpid, or at least thin and not viscid, it is probably due to pressure. This is not, however, a positive sign, since very frequently in cases of asthenic inflammations we have an exudate lacking entirely in the fibrinous constituents.

Tumors of the mediastinum invading the lungs have frequently been mistaken for chronic and even acute pneumonia, passing, as they do, along the larger bronchial tubes and blood vessels.

Without doubt, in a certain number of cases, either hypostatic pneumonia, or pneumonia due to pressure on the bronchial vessels, develops as the tumor invades the lung, and in such cases it is absolutely impossible to make any diagnosis unless by symptoms of pressure in the mediastinum, or some history pointing to such a result. Walsh has stated that if the lesion be due to a tumor, the affected side will increase in bulk rather than diminish, and that dyspnœa out of proportion to the degree of consolidation points to a mediastinal disorder rather than one confined to the lungs. If the heart be displaced in either direction, the odds point to mediastinal tumor, but the presence or absence of a hæmoptysis, as has just been stated, influences the diagnosis not at all.

The diagnosis of *pericarditis* from mediastinal lesions is much more readily made. The history of sudden præcordial pain, and the limited area, aid us very materially in deciding as to what the disorder is, while the description of the onset of the attack, with a few pointed questions as to systemic taints, etc., may do much to unravel the mystery. The distention of the pericardial sac from effusion gives us a regular outline, while the dullness of mediastinal disease is irregular and varying.

The *prognosis* of mediastinal cancer is, of course, invariably fatal, and this result approaches by no means slowly, death generally relieving the sufferer in a few weeks or months, or at most a year; and nothing can be done save to render the few remaining weeks as comfortable as possible.

The *treatment* should largely consist in the administration of light and easily digested food, which should be prepared so as to be easily swallowed.

Paracentesis may be performed to relieve the dyspnœa due to accumulations of fluid. Chloroform and ether may be used to relieve sudden exacerbations of pain which cannot be controlled by the internal use of analgesics. The first may also be of value for relieving spasm of the glottis, if it appear. Opium or cannabis indica should be pushed to the point of euthanasia, although the first should be invariably combined with atropia, in order to avoid its depressing influence on the respiratory centre.

TABLES

CONTAINING THE HISTORY OF NINETY-EIGHT CASES OF MEDIASTINAL SARCOMA

SARCOMA.

No.	Age.	Sex.	Cause.	Area Involved.	Other Parts Affected.	Chief Symptoms.	Duration.	Result.	By Whom and Where Reported.	Variety.	Primary Seat.	Occupation.	Remarks.
1	30	M.	...	Anterior mediastinum.	Vena cava inferior and aorta were involved; pericardium, right lung and pleura affected.	Pain in chest.	Not clearly stated.	Death.	Horstmann. Inaug. Dissert., Berlin, 1871.	Lympho-sarcoma.	Persistent thymus.	Soldier; formerly a laborer.	...
2	39	M.	...	Middle and posterior mediastinum.	Compressed trachea and œsophagus; thrombosis in both internal jugulars; metastasis to lung, heart and liver.	Not stated.	...	Death.	Paulicki. *Jahresbericht über die Fortschritte und Leistungen der gesammten medicin*, II Jahrg, 1867, I Bd., p. 279.	Not stated.	...	...	...
3	25	F.	...	Chiefly in anterior mediastinum, but entire space involved.	Pericardium and heart affected.	Cough and dyspnœa.	7 weeks.	Death.	Riegel. *Virch. Archiv*, Bd. XLIX, Heft 2, p. 193.	Spindle-celled sarcoma.	Mediastinum.	...	...
4	52	M.	...	Anterior mediastinum.	Involved sternum and pressed on superior vena cava.	Loss of flesh, dyspnœa and dysphagia; symptoms arising from pressure on vena cava.	1 year.	Death.	St. Bartholomew's Hospital Reports, p. 245, vol. II.	Lympho-sarcoma.	Mediastinum.	Coachman.	...

5	23	M.	...	Anterior mediastinum.	Lungs, blood vessels of chest and bronchi are involved; pleuræ involved the most.	Dyspnœa, cyanosis and pain.	A few weeks.	Death.	Erichsen. *Petersb. Med. Zeit.*, XII, Heft 6, p. 352.	Medullary.	...	Workman.	...
6	60	F.	...	Anterior mediastinum.	None.	Dyspnœa and pain; no impairment of nutrition; enormously fat.	Not stated.	Death.	Wilson. *Jour. Amer. Med. Assoc.*, Aug. 2, 1884.	Not stated.	Anterior mediastinum.	Housewife.	...
7	9	F.	...	Sternum.	All the vertebræ below the 4th dorsal.	Palsy of lower extremities; sensation partly lost; incontinence of urine and feces.	40 days.	Death.	St. Bartholomew's Hospital Reports, vol. XX, p. 225.	Lymphosarcoma.	Not known.	Child.	...
8	60	M.	...	Posterior mediastinum.	Trachea and large blood vessels are involved, with all the nerves in posterior spaces; also the root of the lungs.	Dyspnœa and exhaustion.	About 6 mos.	Death.	Bennett. "Intrathoracic Growths," London, 1871.	Medullary.	Mediastinum.	Physician.	...
9	...	M.	...	Anterior mediastinum.	Lymphatic vessels swollen.	Lividity of face; pain at upper part of sternum.	11 mos.	Death.	Bruen. *Phila. Med. News*, March 15th, 1884.	Spindle-cell.	...	...	...
10	15	M.	...	Anterior mediastinum.	Brachial plexus and all the vessels of the left side, subclavian, carotid, jugular and innominate were all included in growth.	Cough; pain in left arm; rigors and night sweats.	2½ mos.	Death.	West. Trans. Path. Soc. Lond., 1883, vol. XXXIV, p. 233.	Round-celled.	Anterior mediastinum.	Telegraph boy.	...
11	20	M.	...	Anterior mediastinum.	Sternum.	Pain and cough; dyspnœa and dysphagia.	4 or 5 years.	Death.	Powell. Trans., Path. Soc. Lond., vol. XXI, p. 358.	Lymphosarcoma.	Anterior mediastinum.	Engineer.	...

No.	Age.	Sex.	Cause.	Area Involved.	Other Parts Affected.	Chief Symptoms.	Duration.	Result.	By Whom and Where Reported.	Variety.	Primary Seat.	Occupation.	Remarks.
12	20	M.	...	Entire mediastinum.	Pericardium involved and lymphatics enlarged.	Palpitation of heart; sickness of stomach and phlebitis.	7 mos.	Death.	Trans. Path. Soc. Lond., vol. XXXI, p. 279.	Lympho-sarcoma.	Mediastinum.	...	...
13	43	M.	Pleurisy and pneumonia year before.	Anterior mediastinum.	Displaced heart to the right by pressure at 6th rib; tumor adherent to 6th rib and sternum.	Pain in upper left chest and arm, and left side of heart.	Not stated.	Death.	Williams. Proc. Med. Soc. of Lond., vol. IX, p. 209.	Lympho-sarcoma.	Not stated.	Carpenter.	...
14	42	M.	...	Anterior mediastinum occupied place of heart.	Heart displaced backward and to the left; tumor attached to sternum and surface of pericardium.	Felt very ill and had great headache.	Not known.	Death.	Shapleigh. Trans. Path. Soc. Phila., 1871–1872, p. 217.	Lympho-sarcoma.	Anterior mediastinum.	Carpenter.	Death was sudden.
15	51	M.	Exposure to bad weather.	Anterior mediastinum.	Pressed on right lung.	Dyspnœa; chills; loss of flesh; tubular breathing.	Very short.	Death.	Anderson. *Glasgow Med. Jour.*, Sept., 1883, p. 223; Trans. Path. and Clin. Soc.	Lympho-sarcoma.	Anterior mediastinum.	Not stated.	...
16	34	M.	...	Anterior mediastinum.	Pericardium and lung affected by tumor.	Dyspnœa; œdema of right arm; anorexia; pain in chest, on right side.	Seen for 5 weeks; "short."	Death.	Liborius. *Virch. Archiv*, XCIII, p. 401, Heft 3.	Round-celled.	Mediastinum.	Soldier.	...
17	31	M.	...	Posterior mediastinum.	Tumor attached to right lung and great blood vessels and heart; pressed on left jugular; vena cava superior occluded.	Headache, cough, and œdema of left shoulder.	5 weeks.	Death.	Liborius. *Virch. Archiv*, XCIII, p. 414, Heft 3.	Medullary.	Mediastinum.	Soldier.	...

18	50	F.	...	Mediastinum (does not state which spaee).	Lungs, heart, left orbit and kidney.	Disordered circulation.	Not stated.	Death.	Liborius. *Virch. Archiv*, XCIII, p. 417, Heft. 3.	Spindle-celled.	Not stated.	Housewife.	..
19	76	F.	...	Posterior mediastinum.	Pericardium.	Not stated.	Not stated.	Death.	Liborius. *Virch. Archiv*, XCIII, p. 418, Heft 3.	Round-celled.	Not stated.	...	...
20	42	M.	...	Posterior mediastinum.	Right bronchus occluded.	Cough, pain and loss of flesh.	1 year.	Death.	Powell. Trans. Path. Soe. Lond., XXX, p. 249.	Lympho-sarcoma.	Posterior mediastinum.	Plumber.	...
21	18	M.	...	Anterior mediastinum.	Pericardium, aorta and trachea were compressed.	Dyspnœa.	2 mos.	Death.	Gee's case (Moore, reporter). Trans. Path. Soc. Lond., XXXV, p. 374.	Lympho-sarcoma.	Anterior mediastinum.	Not stated.	...
22	64	M.	...	Anterior mediastinum.	Sternum diseased from 4th to 6th rib, on both sides.	Great pain in chest.	18 mos.	Death.	*Allgemeine Wiener Medizin Zeitung*, 1862, S. 81-87; also *Arch. für Klin. Chir.*	Cysto-sarcoma.	Anterior mediastinum.	...	...
23	...	..	...	Mediastinum (does not state which part).	Trachea.	Severe pleurisy; hemorrhagic exudate.	Not stated.	Death.	Boek. *Schmidt's Jahrbücher*, vol. XLIII, p. 1891.	Not stated.	Not stated.	Not stated.	...
24	47	F.	...	Gland in anterior mediastinum.	Tumor of lumbar and retro-peritoneal glands and in the lungs.	No pain, but sensation of pressure.	Not stated.	Death.	*Schmidt's Jahrbücher*, vol. LXVI, p. 47.	Medullary sarcoma.	Retro-peritoneal glands.	Housewife.	...
25	16	F.	...	Anterior mediastinum; reached from thyroid to diaphragm.	Pericardium involved; pleura adherent to sternum and ribs.	Dyspnœa and enlargement of cervical veins.	3 mos.	Death.	Albutt. *Brit. Med. Journal*, Sept. 5th, 1874, p. 300; also *Rev. des Sci Médicale*, vol. V, p. 530.	Not stated.	Mediastinum.	Weaver.	...
26	22	M.	...	Anterior and posterior mediastinum.	Sternum adherent to mediastinal tissues; pericardium thickened and attached to tumor; pleura thickened.	Dyspnœa and great pain.	10 weeks.	Death.	Bradbury. *Brit. Med. Journal*, Nov. 19, 1874, p. 363.	Not stated.	Mediastinum.	Laborer.	...

No.	Age.	Sex.	Cause.	Area Involved.	Other Parts Affected.	Chief Symptoms.	Duration.	Result.	By Whom and Where Reported.	Variety.	Primary Seat.	Occupation.	Remarks.
27	52	M.	...	Anterior mediastinum.	Pleura filled with serum; apices of both lungs involved; aorta compressed; superior vena cava almost occluded.	Cough; œdema of legs; dyspnœa; dysphagia; loss of flesh; lumps in the axilla.	...	Death.	Andrews and Leggs Ormerod. St. Bartholomew's Hosp. Reports, XII, p. 247, 1876.	Lympho-sarcoma.	Mediastinum.	Coach-maker.	...
28	15	M.	Caught cold.	Chiefly in posterior mediastinum.	Pressed on lung; œsophagus involved; left arm œdematous.	Left pupil contracted; pain in chest; œdema.	5 mos.	Death.	Smith. *British Med. Journal*, Dec. 30th, 1876, p. 869.	Lympho-sarcoma.	Mediastinum.	Not stated.	...
29	...	...	...	Entire mediastinum.	Involved pericardium and œsophagus; involved heart muscle; bronchial glands not discased; pleura studded with secondary growth.	Not stated.	Not stated.	Death.	Bennett. *Brit. Med. Jour.*, May 5th, 1877.	Round-celled.	Mediastinum.	Not stated.	...
30	30	F.	...	Anterior mediastinum.	Affected pectoral muscle and pericardium; right vagus and anterior wall of œsophagus involved.	Not stated.	Not stated.	Death.	Finney. *Brit. Med. Journal*, June 9th, 1877, p. 715.	Lympho-sarcoma.	Mediastinum.	Housemaid.	...
31	55	F.	...	Anterior and posterior mediastinum.	Embraced bronchus, aorta and innominate; also 3d dorsal to 4th lumbar vertebra.	Dyspnœa.	4 mos.	Death.	Moore. *Brit. Med. Jour.*, April 29th, 1882, p. 622.	Lympho-sarcoma.	Mediastinum.	Housemaid.	...

32	60	M.	...	Upper part of anterior and posterior mediastinum.	Tumor covered aorta, a rib and great blood vessels; involved œsophagus; obliterated left innominate; extended into abdomen and affected liver.	Pain and dyspnœa.	4 mos.	Death.	Roberts and Mott. *Brit. Med. Jour.*, Jan. 22d, 1881, p. 120.	Round-celled.	Mediastinum.	Mill sawyer.	...
33	32	F.	Carrying a heavy child.	Mediastinum; which space not stated.	Superior vena and right phrenic nerve surrounded; pressed on ascending cava; involved ovaries and kidneys, and affected auricles of heart.	Œdema of lower extremities; distention of superficial abdominal veins.	9 mos.	Death.	Dyson. *Brit. Med. Jour.*, March 3d, 1883, p. 416.	Lympho-sarcoma.	Not stated.	Housewife.	...
34	33	M.	...	Anterior mediastinum.	Right bronchus perforated; occluded superior vena cava; pericardium and left lung in tumor; œdema of lungs.	Dyspnœa, cyanosis and hazy vision.	2 mos.	Death.	Franklin. *Med. Times and Gaz.*, Oct. 31st, 1874, p. 495.	Round- and spindle-celled sarcoma.	Not stated.	Cane worker.	...
35	...	M.	...	Anterior mediastinum.	Overlaid aorta and pulmonary artery; compressed vessels of thorax and neck.	Great pain; lividity of face; loss of flesh.	10 mos.	Death.	Bruen. Trans. Path. Soc. Phila., XII, p. 244.	Spindle-celled sarcoma.	Mediastinum.	...	...
36	14	M.	...	Anterior mediastinum, and also posterior mediastinum.	Adherent to sternum, ribs and diaphragm; attached to pericardium; pleural cavities contained much fluid.	Dyspnœa; blueness of face; jugulars swollen.	3 weeks?	Death.	Cole. *Lancet*, London, Oct. 23d, 1875, p. 586.	Lympho-sarcoma.	Not stated.	"A traveler."	...
37	43	M.	...	Anterior mediastinum.	Heart invaded by growth; pericardium encroached upon; left lung involved; occluded œsophagus.	Dyspnœa and cough; wasting; great pain on inspiration.	2 mos. after first seen.	Death.	Williams. *Lancet*, London, March 20th, 1886, p. 545; reported to Medical Society of London.	Lympho-sarcoma.	Mediastinum.	Not stated.	...

No.	Age.	Sex.	Cause.	Area Involved.	Other Parts Affected.	Chief Symptoms.	Duration.	Result.	By Whom and Where Reported.	Variety.	Primary Seat.	Occupation.	Remarks.
38	45	M.	...	Anterior mediastinum.	Adherent to sternum; disease scattered through whole body; pericardium filled with fluid.	Pain in chest; slight hematemesis; cyanosis; œdema of arms.	5 mos.	Death.	Eger. *Arch. f. klin. Chir.*, XVIII, p. 493.	Small, spindle-celled sarcoma.	Not stated.	Baker.	...
39	24	F.	...	Anterior mediastinum.	Tumor in spleen.	Swelling of supra-clavicular glands; livid lips and face; pain in chest; left breast œdematous; dyspnœa.	About 1 year.	Death.	Eger. *Arch. f. klin. Chir.*, XVIII, p. 493.	Small, round-celled sarcoma.	Not stated.	...	...
40	61	F.	...	Chiefly in posterior mediastinum.	Ganglia in chest; bronchial tubes and adventitia(?) of blood vessels were affected.	Dyspnœa and dysphagia.	4 mos.	Death.	Blix. *Hygeia*, 1875; Svenska, lack. fork, p. 246; also in *Nord. Med. Arkiv*, Bd. VIII, No. 13, p. 9; also *Revue des Sci. Méd.*, vol. IX, p. 75.	Not stated.	Thyroid gland.	...	...
41	Adult.	M.	...	Chiefly in middle mediastinum.	Pleuræ contained bloody serum; trachea involved; right lung œdematous; right pulmonary artery is pressed on; superior vena cava involved.	Great pain; dyspnœa; cyanosis and aphonia.	5 mos.	Death.	Eger. *Arch. f. klin. Chir.*, XVIII, p. 502; also Zur Path. der Mediastinaltumoren. Breslau, 1872. Inaug. Dissert.	Lympho-sarcoma.	Not stated.	Restaurateur.	...

42	70	F.	...	Anterior mediastinum.	Adhesions between tumor and visceral layer of pleura; not attached to sternum and costal cartilages; overlaid aorta and pulmonary artery.	Slight dyspnœa and cough.	Not known.	Death.	Bruen. *Medical News*, Feb. 12, 1887, p. 179.	Round-celled sarcoma.	Mediastinum.	Servant.	...
43	28	M.	Syphilis.	Entire mediastinum.	Large nerves of chest involved; aorta displaced and imbedded in growth; left innominate ran through mass; adhesions to sternum.	Severe cough; emaciation and night sweats.	8½ mos.	Death.	Allen. *Australian Med. Jour.*, Melbourne, 1880. New Ser. II, p. 450.	Lymphosarcoma.	...	...	...
44	30	M.	Syphilis; caught cold.	Chiefly in middle mediastinum.	Heart displaced to right; pericardium heavily coated with recent lymph.	Œdema of face; slight hemoptysis; great pain between right scapula and spine; right pupil larger than left; dyspnœa and dysphagia.	About 1 year.	Death.	Byrom Bramwell. *Brit. Med. Jour.*, Jan. 6th, 1877, p. 8.	Lymphosarcoma.	Thorax.	Laborer.	...
45	37	M.	...	Anterior mediastinum.	Right lung by metastasis; swollen bronchial glands; trachea and œsophagus pressed on.	Œdema of upper part of chest; skin livid; pain in epigastrium.	4 mos.	Death.	Flament. *Rec. de Mém. de Mét. Milit.*, XXXII, p. 81, Jan. and Feb., 1876.	...	Thymus gland.	Soldier.	...
46	19	M.	...	Anterior mediastinum.	Right lung involved; serum in pleural cavities; pericardium contained hemorrhagic fluid.	Hemoptysis; pain in chest and dyspnœa.	7 years.	Death.	Oser. *Wien. Med. Presse*, XIX, 52, 1878.	Lymphosarcoma.	Thymus gland.	Not stated.	...
47	22	F.	...	Entire mediastinum.	Trachea and bronchi involved; right lung diseased; superior vena cava involved; general sarcoma of whole body.	Cyanosis; pain in breast; œdema of face; asphyxia.	6 weeks.	Death.	Hayem and Graux. *Gaz. de Paris*, 24, 1874.	Spindle-celled sarcoma.	Knee.	Not stated.	...

No.	Age.	Sex.	Cause.	Area Involved.	Other Parts Affected.	Chief Symptoms.	Duration.	Result.	By Whom and Where Reported.	Variety.	Primary Seat.	Occupation.	Remarks.
48	49	M.	...	Posterior mediastinum.	Right pleura full of fluid; bronchial glands involved; liver enormous; lungs sarcomatous.	Chills; fever; profuse sweats; œdema and ascites.	10 weeks.	Death.	Laségue. *Arch. Gén. de Méd.*, XXIII, p. 486, April, 1874.	Lympho-sarcoma.	Not stated.	Laborer.	...
49	42	M.	Fall on chest.	Anterior mediastinum.	Spleen and right lung.	Symptoms chiefly of emphysema.	10 years.	Death.	Venturini. Ragliatore Med., Ser. III, Vol. XXIII.	Sarcoma-carcinoma-tosum.	Not stated.	Not stated.	...
50	27	F.	...	Mediastinum; which space not stated.	Tumor destroyed 2d and 3d ribs; involved upper part of lung.	Loud bronchial breathing.	Not stated.	Death.	Lorenzetti. Il Morgagni Disp., VII and VIII, p. 562.	Lympho-sarcoma.	Not stated.	Not stated.	...
51	22	M.	...	Anterior mediastinum.	Sternum adherent to tumor; compressed trachea and surrounded arch of aorta; affected pericardium.	Pain in chest; dyspnœa; giddiness; numbness in right arm.	8 mos.	Death.	Moore. *Boston Med. and Surg. Journal*, Dec. 5th. 1878.	Lympho-sarcoma.	Not stated.	A dental student.	...
52	...	...	...	...	...	Fever of an intermittent type; coma and heart failure.	...	Death.	Schlepegrell. Beitrag zur Lehre von den intrathoracic sarcoma.	Lympho-sarcoma.	...	...	...
53	...	..	...	Anterior mediastinum and sternum.	Had erysipelas of face.	Pain under sternum; pulsating tumor.	18 mos.	Death.	Langer. Oesterreich. Med. Jahrb., Heft 3-4.	Spindle-celled.	Not stated.	Not stated.	...
54	11½	M.	...	Entire mediastinum.	Involved pericardium.	Cough, pain in chest.	3 mos.	Death.	Huber. *Deutsch. Arch. f. Klin. Med.*, XVII, p. 496.	Lympho-sarcoma.	Not stated.	...	...

55	21	F.	...	Mediastinum; does not state which part.	Upper part of left lung was involved; right lung also involved; pleural cavity filled with yellow fluid.	Dyspnœa and cough; symptoms of pleurisy	About 7 mos.	Death.	Schreiber. *Deutsches Archiv f. Klin. Med.*, XXVII, p. 52.	Fibro-sarcoma.	Not stated.	Chamber-maid.	...
56	17	M.	...	Anterior mediastinum.	Metastasis to heart muscle and both kidneys.	Cough, fever, anorexia and cyanosis.	25 days. (?)	Death.	Schreiber. *Deutsches Arch. für Klin. Med.*, XXVII, p. 55.	Round-celled sarcoma.	Anterior mediastinum.	Not stated.	...
57	35	F.	...	Entire mediastinum.	Trachea and blood vessels included in tumor; diminished calibre of vena cava and subclavian.	Swelling of hand and arm on right side; hard cervical glands.	Not stated.	Death.	Schreiber. *Deutsches Arch. für Klin Med.*, XXVII p. 57.	Fibro-sarcoma.	Mediastinum.	...	...
58	19	M.	Caught cold.	Anterior mediastinum.	Left side of chest, left lung collapsed.	Dyspnœa, cough and slight pains.	About 10 weeks.	Death.	Hall. *Lancet*, 1880, I, p. 493; Trans. Chir. Soc., Lond., 1880, XIII, p. 200.	Not stated.	Anterior mediastinum.	Clerk.	...
59	...	...	...	...	...	...	...	...	Nikanoff. *F. Ejened Klin. Gaz.*, St. Petersb., 1881, I, 72-75.	...	...	...	...
60	9	F.	...	Anterior and posterior mediastinum.	Sternum, ilium, sacrum and vertebræ.	Palsy of lower extremities; wasting.	3½ mos.	Death.	Jones. St. Bartholomew's Hosp. Reports, 1884, XX, p. 225.	Round-celled sarcoma.	...	...	...
61	...	...	...	...	...	...	...	...	Anfimov. *Med. Sbornik*, Tiflis, 1885, No. 39, p. 48.	...	...	...	...
62	62	M.	...	Anterior mediastinum.	Sternum and ribs; also the costal cartilages.	Diarrhœa; pain in chest in posterior part; case simulated; aneurism.	...	Death.	Orsi. *Gaz. Med. Ital. Lomb.* Milan, 1883, S. V, 3.	Osteo-sarcoma.	Sternum.	...	...
63	...	...	...	Anterior and middle mediastinum.	Arose from thyroid and extended over great vessels.	Not stated.	...	Death.	Laënnec. *Jour. de Méd. de l'ouest.* Nantes, 1882, XVI, p. 151.	Lympho-sarcoma.	Thyroid gland.	...	...

No.	Age.	Sex.	Cause.	Area Involved.	Other Parts Affected.	Chief Symptoms.	Duration.	Result.	By Whom and Where Reported.	Variety.	Primary Seat.	Occupation.	Remarks.
64	19	F.	...	Anterior mediastinum.	Involved root of lung and right bronchus; extended over the base of the heart.	Short, dry cough; pain in chest; diarrhœa; malnutrition.	3 years.	Death.	Bevan. *Illust. Jour. Med. and Surg.*, 1883, S. IX, p. 133.	Round-celled sarcoma.	Mediastinum.	...	...
65	...	...	...	Middle mediastinum.	Pressed on trachea and œsophagus.	...	...	Death.	Miller. *Practitioner*, Lancaster, 1883, I, p. 69.	...	Trachea.	...	...
66	55	M.	...	Anterior mediastinum.	Left bronchus; pericardium and pulmonary artery are involved.	Œdema of arms and legs.	Not stated.	Death.	Fütterer. Ein Fall von Sarc. alveol. in Med. Ant., Wurzburg, 1883, pp. 40.	Alveolar sarcoma.	...	...	...
67	45	M.	...	Anterior mediastinum.	Sternum; pleura and lungs.	Dyspnœa; loss of strength; number of red blood corpuscles very low.	Several mos.	Death.	Heitzmann. *New York Medical Record*, 1883, XXIV, p. 691.	Not stated.	Sternum.	Physician.	...
68	...	...	...	...	...	...	...	...	Daraignez. *Jour. de Méd. de Bordeaux*, 1886-87, XVI, p. 259.	...	...	...	...
69	52	M.	...	Anterior mediastinum and belly.	Extended from clavicles to umbilicus.	Dyspnœa and anasarca.	5 or 6 mos.	Death.	Du Bois. *Physician and Surgeon*, Ann Arbor, Mich., 1882, IV, p. 18.	Not stated.	Not stated.	...	...
70	64	F.	...	Anterior mediastinum.	Thyroid glands; pleuræ filled with serum; left lung collapsed.	Dyspnœa; cyanosis; extremities cold, and cyanotic dysphagia.	About 2 years.	Death.	Blomfield. *Med. Times and Gaz.*, 1882, I, p. 521.	Lympho-sarcoma.	...	Widow.	...

71	55	F.	...	Anterior mediastinum; also both the other spaces.	Aorta surrounded by growth, as was also the innominata; tumor adherent to spine.	Pain in chest, right side of which was motionless.	4 mos.	Death.	Moore. *Dub. Jour. Med. Sci.*, 1882, LXXIV, p. 253.	Not stated.	...	Servant.	...
72	49	M.	...	Chiefly in anterior mediastinum.	Skin, liver and pericardium are sarcomatous; also the lungs.	Slight cough; dyspnœa; pain in chest; face reddened; submaxillary glands enlarged.	About 2½ mos.	Death.	Schlepegrell. Beiträge zur lehre der intrathorac. Sarc.	Lymphosarcoma.	Mediastinum.	Butler.	...
73	34	M.	...	Anterior mediastinum.	Sternum fast to tumor; pericardium sarcomatous.	Pain over liver and in chest; œdema of right side of face and arms.	About 11 mos.	Death.	Schlepegrell. Beiträge zur lehre der intrathorac. Sarc.	Round-celled.	Mediastinum.	Cabinet maker.	...
74	39	M.	...	Mediastinum.	Metastasis to œsophagus, liver, spleen and heart.	Œdema of face and arms; coma.	About 6 mos.	Death.	Schlepegrell. Beiträge zur lehre der intrathorac. Sarc.	Lymphosarcoma.	Mediastinum.	...	...
75	...	...	...	Anterior and posterior mediastinum.	Sternum and vertebra; spleen; exudate in left pleural space; emphysema of lung.	...	...	Death.	Manussi. *Resoc. San de osp. di Trieste*, 1878, IV, 173.	Not stated.	...	...	...
76	20	M.	...	Anterior mediastinum.	Thymus gland.	Œdema of left arm; enlarged veins of chest; oppression and diarrhœa.	2½ mos.	Death.	Richaud. *Marseilles Méd.*, 1880, XVII, p. 341.	Fibrosarcoma.	Mediastinum.	Journalist.	...
77	24	M.	...	Chiefly in right side of chest, but invaded mediastinum.	Heart displaced to the left; diaphragm and liver pressed; pleura adherent to tumor.	Loss of flesh; dyspnœa and palpitation.	3½ mos.	Death.	Starr. *Phila. Med. Times*, April 26th, 1879, p. 363.	Spindle-celled	Osteosarcoma of thigh.	...	...
78	40	M.	...	Right side of chest and both sides of trachea.	Compression of right side of heart; metastasis to right lung.	Cough; pain in right side and dyspnœa.	About 6 mos.	Death.	Schlepegrell. Beiträge zur lehre von der intrathoraschen Sarcoma.	Spindle-celled sarcoma.	Right side of chest.	Railroad porter and baggage master.	..

No.	Age.	Sex.	Cause.	Area Involved.	Other Parts Affected.	Chief Symptoms.	Duration.	Result.	By Whom and Where Reported.	Variety.	Primary Seat.	Occupation.	Remarks.
79	8	M.	...	Anterior mediastinum.	Edges of right lung; vagus and pulmonary artery involved.	Cough; dyspnœa, cyanosis and swelling of glands; pain in chest.	About 5½ mos.	Death.	Roscnberg. Ueber Mediastinaltumorcn bei Kindern. Göttingen, 1884.	Lympho-sarcoma.	Thymus or gland of mediastinum.	...	...
80	8	M.	...	Whole thorax.	Affected pericardium and spread into lungs along vessels and bronchi.	Not stated.	Urgent symptoms lasted 8 weeks.	Death.	Hutton. *Lancet*, Lond., April 30th, 1887, p 883.	Not stated.	Glands of mediastinum.	...	...
81	...	...	...	Anterior mediastinum.	Pushed back and completely covered the pericardium; attached to pulmonary artery, pleura and right lung.	...	...	Death.	Osler. *Ill. Jour. Med. and Surg*, vol. I.	Myeloid-sarcoma.	Radius.	...	...
82	8	M.	...	Anterior mediastinum.	Involved lungs and pericardium; pressed on trachea.	Cough; dyspnœa, cyanosis, veins of right side of face full.	2 or 3 years.	Death.	Grützner. Dissertation, Berlin, 1869.	Lympho-sarcoma.	Mediastinum.	Child.	...
83	20	M.	...	Anterior mediastinum.	Pressed on brachio-cephalic vein, vena cava and great azygos; involved trachea, larger bronchi and anterior surface of œsophagus; also secondary in kidney.	Oppression; dyspnœa and pain.	...	Death.	Pernice. *Pisano*, Palermo, 1884, V, 5, 3 plates.	Not stated.	Mediastinum.	...	...

84	...	...	...	Posterior mediastinum.	Pressed on larger bronchi.	Great dyspnœa; pain and loss of voice; disturbed respiration.	...	Death.	Capozzi. *Il Morgagni* Napoli, 1870, XII, p. 108.	Lympho-sarcoma.	Not stated.	...	...
85	31	M.	...	Anterior mediastinum.	Lungs congested; affected bronchial glands.	Vomiting; œdema of chest and extremities, particularly on right side; glands enlarged.	...	Death.	Beringier. *Bull. de la Soc. de Med. de Paris*, 1879, p. 727.	Round-celled sarcoma.	...	...	...
86	...	...	...	...	...	...	...	...	Lamb. Bildrag der mediastinal. Casuistik. Hosp. Tidende., S. 161.	Lympho-sarcoma.	...	...	...
87	...	...	...	Glands of entire mediastinum.	...	...	Very short.	Death.	Duflocq. *Progres. méd.*, Paris, 1886, 2, S. III, p. 70.	Multiple-sarcoma.	...	...	...
88	...	...	...	...	...	...	...	...	Gluzinski. *Gaz. lek Warzawa*, 1883, 2, R. III, p. 260.	Lympho-sarcoma.	...	...	...
89	5	F.	..	Anterior mediastinum; extended from sternal notch to diaphragm.	Enclosed pericardium and heart on all sides except the back; glands in posterior mediastinum enlarged.	Cachexia œdema of face; purpura hemorrhagica; spleen enlarged; low bodily temperature.	3½ mos.	Death.	Gamgee. *Edin. Med. Jour.*, March, 1873, p. 797.	Lympho-sarcoma.	Thymus.	...	...
90	26	F.	...	Posterior and anterior mediastinum.	Pericardium and left lung adherent to tumor; left lung diseased.	Pain in chest; dyspnœa and cyanosis.	About 5 mos.	Death.	Singer. *Prager. Med. Wochen.*, 1885, X, p. 329.	Spindle-celled sarcoma.	Not stated.	Servant.	..
91	37	F.	...	Anterior mediastinum.	Pericardium chiefly affected and greatly diseased.	...	...	Death.	Clay. *Jour. Anat. and Phys.*, 1879, p. 500; also *Edin. Med. Jour.*, Mareh, 1870.	Lympho-sarcoma.	Mediastinum.	...	...

No.	Age.	Sex.	Cause.	Area Involved.	Other Parts Affected.	Chief Symptoms.	Duration.	Result.	By Whom and Where Reported.	Variety.	Primary Seat.	Occupation.	Remarks.
92	38	M.	...	Entire mediastinum.	Serum in right pleural cavity.	Congestion of face; dyspnœa, which was increased by lying down; enlarged veins of chest.	4 mos.	Death.	Aubry, Henri. Thèse de Paris Cont. à l'étude des tumeurs malignès du mediastin. Paris, 1881.	"Adenoid sarcoma." ("Lympho-sarcoma.")	Mediastinum.	Tinsmith.	...
93	37	M.	...	Anterior mediastinum.	Pericardium thickened; aorta surrounded at its origin; pleuræ adherent to sternum.	Oppression and pain under sternum; cyanosis and dyspnœa.	Seen for 2 days.	Death.	Bertrand. Thèse de l'école de Med., 1883–1884, Tom. II.	Round-celled sarcoma.	Mediastinum.	Locksmith.	...
94	32	M.	...	Chiefly in anterior mediastinum.	Pericardium adherent to sternum; superior vena cava; both trunks of brachio-cephalic veins involved; pleuræ infiltrated.	Quick respiration; dyspnœa and fever; painful deglutition; bad bronchitis.	1½ mos.	Death.	Hayem's case, Bertrand. Thèse de l'école de Med., 1883–1884, Tom. II.	Not stated.	Not stated.	Locksmith.	...
95	Adult.	F.	...	Anterior mediastinum.	Separated fibres of pectoral muscles and compressed lobes of lung, but did not involve them.	Dyspnœa and exhaustion.	"Many years."	Death.	Lagrange and Duret. *Bull. de Soc. Anat.*, Tom. XLVIII, p. 516.	Spindle-celled sarcoma.	Breast.	...	...
96	5	M.	Acute exanthematous fever.	Anterior mediastinum.	Attached to sternum and upper part of pericardium; superior vena cava thickened.	Cyanosis; loss of flesh; vocal fremitus impaired.	10 mos.	Death.	Cobet. Inaug. Dissert. Marburg, 1870.	Lympho-sarcoma.	Mediastinum.	...	Tumor the size of an eye.

97	14	M.	...	Anterior mediastinum.	Compressed trachea and large veins of chest, particularly the superior vena cava; implicated the œsophagus and pericardium at base.	Asphyxia; signs of tracheal stenosis; neuralgic pains in left arm and shoulder; enlarged glands above clavicle; œdema and cyanosis of face.	9 mos.	Death.	Wyss. Proc. Ninth Inter. Med. Congress, 1887; Section on Children's Diseases.	Lymphosareoma.	Thymus gland.	Child.	...
98	8	M.	...	Mediastinum.	Growth invaded lungs, along bronchi; infiltrated pericardium and upper part of auricles; also glands of mediastinum.	Dyspnœa, mainly expiratory.	Over 2 mos.	Death.	Hutton. *Brit. Med. Jour.*, Vol. I, 1887, p. 735.	Not stated.	Not stated; probably mediastinal	...	...

SARCOMA.

Sarcoma is, of course, the malignant disease which, next to cancer, most frequently affects the mediastinum. When discussing the subject of mediastinal cancer, it was stated by the writer that sarcoma was less frequently met with in this region than carcinoma, and a glance at the number of cases reported showed this assertion to be true.*

While the question of relative frequency is therefore decided as to the mediastinum as a whole, it is interesting to note whether both these growths generally attack the same or different spaces, and a glance at the table showing the distribution of cancer readily decides this point, if at the same time the table on sarcoma, which here follows, be kept in view. Unfortunately, in this, as in all other tables, the total number of cases gathered cannot be used, owing to the neglect of the original reporter, who failed to note certain necessary points in regard to them, but a sufficient number are reported in a complete form to permit the basing of conclusions :—

33 cases	occurred	in	the	Anterior Mediastinum	alone.
8 cases	"	"	Posterior	"	"
8 cases	"	"	Entire	"	"
1 case	"	"	Anterior and Middle		"
3 cases	"	"	Anterior and Posterior		"
1 case	"	"	" Whole Thorax."		
3 cases	"	"	Middle Mediastinum		"

It is seen on comparing these two tables that sarcoma affects each of the divisions of the mediastinum in the same ratio as does cancer, and that here again the anterior mediastinum falls a victim to the growths of malignancy more frequently than its fellows, notwithstanding the opinion of several authors that the posterior or middle spaces are more frequently attacked. Arguing from a purely theoretical standpoint it is but natural that we should agree in such an opinion, owing to the histological

* In 7566 cadavers examined in the Marine Hospital at Kronstadt, there were found 158 malignant growths of the mediastinum, of which 127 were carcinomatous, and only 31 sarcomatous.

arrangement of the tissues in these latter spaees, but theory has again to fall before practieal experience.

Turning to a consideration of the pathology of the affeetion in this region, we find many points whieh correspond in every particular with the pathologieal study of eaneer, but there are one or two whieh are certainly far different. Perhaps the most common point of differenee lies in the manner and rapidity of metastasis in the two diseases, since, as every one knows, sarcoma seems to leap from place to plaee in the body, dotting all the tissues with its nodules, while its fellow cancer is far more apt to remain limited to the tissues surrounding its point of origin or spreads slowly into other and foreign areas.

For this reason we should expect to find that sareoma in a very large proportion of eases oeeurred as a secondary growth in the mediastinum; but an examination of the literature of the subject, both as regards general opinion and reports of eases, shows sueh a eonclusion to be singularly erroneous. Indeed, the mediastinum seems to rarely suffer from any form of this disease save the primary, and even in those cases in which the lesions were seattered all through the body from head to foot, this space seems to have escaped seeondary contamination. Should the growth appear in this space, however, secondarily, it generally affeets the posterior or middle spaces, owing to the large number of lymphatic glands and like tissues which are found in such positions.

Out of 98 eases reported by various authors and collected by the writer, but 5 were secondary, while 31 were primary, the remaining number having no distinct reference in regard to this point. It is a natural conelusion, and one which is based on faet, that the pleuræ are the ehief points in the chest in whieh sareomata oeeur as primary growths, next to the mediastinal tissues, and, as a consequenee, we find that in nearly every case in which the growth beeomes secondary in the mediastinum, it has been primary in these serous membranes. Lepine, Boehme, Bireh-Hirsehfield, Sehultz, Greenish, and Eppinger have all reported

cases in which primary sarcomatous formations studded the pleuræ.

That this secondary involvement of the mediastinum is not remarkable becomes evident as soon as we remember that the blood vessels and lymphatics of these two sets of tissues are necessarily intimately connected and that metastasis is readily accomplished. It is a point worthy of remark that the lungs very rarely form the starting point of the growths, and are, indeed, very rarely affected by primary or secondary formations.

Secondary formations are, however, more common than primary, and generally reach the lung tissue by passing from the mediastinal spaces to the glands at the roots of the lungs, from whence they extend along the bronchial tubes and blood vessels into the lung substance. Under such circumstances the growths are found scattered through the lung tissue, and vary in size from a walnut to an orange, having, as a general rule, a soft and spongy character, although this may, in some cases, be replaced by the variety known as multiple osteoid sarcoma, in which the tumor is so hard as to be cut only with great difficulty with a knife.

Following the pleuræ, in point of importance as disseminators of sarcoma to the mediastinum, are the abdominal viscera, growths of primary origin in this region, in some cases, actually creeping through the diaphragm by the side of the œsophagus, thereby becoming partially mediastinal, or reaching this space by metastasis alone. Metastasis from the arms and legs to this region has also been recorded, and sarcoma occurring anywhere may become mediastinal by the same means. Where the disease is primary in an arm, the secondary growth not unfrequently occurs in the mediastinum, comparatively speaking, while sarcoma in the leg, as a general rule, attacks secondarily the abdominal viscera rather than the tissues above the diaphragm.

The writer has already spoken once or twice of this disease finding a favorable locality for growth in glandular tissues,

and this may need a moment's explanation. Ever since the time of Galen the word "sarcoma" has been used to denote some form of morbid growth, the characters of which were never clearly defined, so that tumors of benign or malignant tendencies have been often classed together under this head. Only within a few years, comparatively speaking, has Virchow given the word a definite and constant meaning by limiting its use to those tumors which, while occurring in the adult body, are evidently built upon the connective tissue of the embryo. Sarcoma can therefore only appear in true connective tissue, made up of simple cells, in theory, but in practical life it almost equally commonly affects secreting glands, or any form of differentiated protoplasm held together by connective tissue.

This matter is mentioned because it in reality bears very forcibly upon the subject in hand, since certain writers, even at the present day, regard all growths attacking glandular bodies, particularly of lymphatic origin, as sarcomatous. Thus Bruen, in the third volume of the "American System of Practical Medicine," published two years ago, makes the following remark: "Lympho-sarcoma, lymphoma, or lymphadenoma, is the form of *malignant** process which probably includes the majority of cases of primary mediastinal growth." It at once becomes evident that such a classification would lead us toward results absolutely different from those already arrived at, since if all these growths are of the same nature, the number of cases of sarcoma would soon surpass those of cancer.

The variations of meaning applied to the terms lymphoma and lymphadenoma seriously hamper the clinician in attempting to discriminate between certain cases, but there can be no doubt that the classification of Dr. Bruen leads to an erroneous impression. It cannot be denied for one moment that lymphoma oftentimes resembles sarcoma so closely that only the most careful microscopical examination can differentiate between them. In some cases the growth known as lymphoma may to all intents and purposes be virtually sarcomatous, seeming to possess equal

* Italics by the writer.

malignaney with ordinary sareoma, and differing from it only by the definiteness of its stroma, while in another set of eases lymphomatous growths may have no seeondary deposits and remain benign.

Those eases reeorded as lympho-sareoma by their original observers have therefore been plaeed in the list of sareomata, but the writer has not thought it proper to add to these all the eases he could find reported as lymphoma or lymphadenoma, notwithstanding the faet that Virehow nses the word lympho-sareoma as synonymous with lymphadenoma. The question of where malignaney begins is a diffieult one to deeide, and as we certainly have a double variety of growth affecting glandular organs it is impossible for any one eolleeting cases to diseover to whieh class they belong, unless the word "malignant" is affixed.

There are two points of differenee in regard to general lymphadenoma and sareoma, as it is ordinarily seen. Lymphadenoma spreads through the lymphaties entirely, while sareoma generally has metastasis through the blood vessels, although, in that form of small round-eelled sareoma whieh most elosely resembles lymphadenoma, metastasis may also be through the lymphatie vessels. Lymphadenoma is more apt also to affeet surrounding tissues than is seeondary sareoma.

The question of pathology is now finished, and the writer will pass on to the *etiology* of these eases.

It is always interesting in studying the causation, near or remote, of any disease, to first endeavor to diseover whether or not age and sex, the two great powers eontrolling our bodies, have shown their foree sufficiently to be eonsidered prime, or even seeondary faetors, in its development; for aside from its purely seientifie aspeet, the question is often one of great importanee, when a diagnosis is both diffieult and needful, or where for any reason it beeomes neeessary to deeide not only the true character of the growth, but also its probable rapidity of development.

In a total number of 98 eases eolleeted by the writer 56 were males and 25 were females, the remaining reports of eases not mentioning the sex.

It is evident, therefore, that males suffer much more frequently than females, and it is interesting to note the frequency with which the disease attacks each subdivision of the mediastinal space in each sex.

Unfortunately, only 65 of the 98 cases are capable of undergoing analysis in this direction, owing to faulty methods of recording the cases on the part of the original observer.

Of the 37 cases occurring in the anterior mediastinum, where the sex is mentioned, 29 were males and 10 females; while of the 9 cases of posterior disease 6 were males and 3 females. In the cases affecting the entire space 6 were males and 3 females. In the cases affecting the anterior and posterior spaces together 2 were men and 2 women. In the cases occurring in the anterior and middle spaces there was one male but no females, while in the middle mediastinum the males were 3 and there were no females. The following table shows the sex and age of all cases available for the purpose, and in addition shows their frequency in decades:

Males.				Females.			
Years—	1—10	Cases—	4	Years—	1—10	Cases—	2
"	10—20	"	8	"	10—20	"	1
"	20—30	"	11	"	20—30	"	7
"	30—40	"	10	"	30—40	"	2
"	40—50	"	10	"	40—50	"	1
"	50—60	"	5	"	50—60	"	2
"	60—70	"	1	"	60—70	"	2
"	70—80	"	0	"	70—80	"	1

The conclusion is reached that the anterior mediastinum is the space most generally affected in both sexes, the males suffering more than the females, and that the period of life in which the disease most commonly occurs is from 30–35 in males, and 35–40 in females. The decade in which the greater number of cases occur is from 20 to 30 in the male and the same in the female.

Although analyses are always wearying, it is necessary to examine as to the variety of sarcoma which most frequently occurs, either as a primary or secondary lesion.

Of the entire number of cases in which the variety of the

sareoma was stated, 30 were of the elass known as lympho-sareoma, of which 15 were primary in the male, and 3 in the female. In the remaining twelve eases, no statement as to their original point of growth is given, 8 of them being males, and 4 females. We also find 11 cases of round-celled sarcoma, 7 of which were primary in the male, and 1 in the female. The other three eases have no further information given, other than that 2 of them occurred in the male, and 1 in the female.

Oecupying a third plaee in point of frequency are the 10 eases of spindle-celled sarcoma, 1 of which was primary in the male, and 1 in the female; 2 were secondary in the male, and 2 in the female. In the remaining four cases, whose point of origin was not stated, the growth oeeurred twicc in the male, and twice in the female.

There can be no doubt that sareoma and other morbid growths, be they benign or malignant, may be brought on by the various eonditions of every-day life, such as trade or occupation, and sarcoma is certainly much more frequently produced in the mediastinum by pressure on the chest by foreign bodies, or like eauses, than is eancer, probably owing to the fact that the tissues partieularly favorable to sarcoma are the ones most generally affected by sueh causes as those just named.

The SYMPTOMATOLOGY of mediastinal sarcoma is almost identical with that of mediastinal cancer, and this has already been so thoroughly eonsidered, both minutely and generally, that it would be useless to repeat it here. The pressure symptoms are always much the same, both as regards the circulation and respiration in both diseases, the ehief difference as regards the symptoms depending on the more rapid course of sarcoma and the enlargement one after another of the glands, which are situated superficially enough to be felt by the fingers or seen by the eye. Unfortunately for the diagnostieian, there is no point between a diagnosis made with ease and one made with extreme difficulty. If a ease presents itself with multiple sareomatous tumors scattered over the trunk or limbs, and eomplains of dyspnœa and the thousand and one symptoms which we know

are produced by growths in this region, it is but a fair conclusion that in that mediastinum we have another or many smaller nodules possessing the same character as their fellows. If, however, the disease of the mediastinum be primary, as it generally is, and the progress be slow, or, as is most frequently the case, confined to the interior of the chest, the diagnosis is exceedingly difficult, and may be impossible, so far as a decision regarding the character of the tumor is concerned.

Quite a number of cases have occurred secondarily in the mediastinum following months, or a year or two, after amputation of a limb for this disease, and the very fact that so much time has elapsed may be deceptive to the physician. The fact that a limb has been operated on for any such tumor, even if the operation has been performed many years before, must be regarded as an important point in an array of evidence generally barren of decisive landmarks and signs.

The differential diagnosis between this and any other intrathoracic benign disorder has identically the same points to be remembered as have been gone over in the discussion of cancer, and there is but one point still to be mentioned, namely, that both sarcoma and cancer of this space generally grow inwardly rather than outwardly, or, in other words, affect nearly all the inner tissues before attacking the chest walls and external parts.

In cases where the diagnosis lies between pleurisy with effusion or pneumonia and mediastinal sarcoma, it is important to remember this point, since in the first named diseases the dullness or flatness on percussion is marked, while in the latter these signs do not appear unless the growth is fairly near the chest wall and of considerable size; and even then, owing to its lack of close contiguity to the anterior chest wall, considerable pressure and force must often be exercised before any change in the percussion note is elicited.

The treatment of sarcoma of this region is far more limited than our meagre knowledge of its symptomatology and pathology, and nothing can be done save to make the downward pathway of the sufferer as easy and comfortable as the circum-

stances will permit. Operative proeedures are, of eourse, impossible, unless the growth have its origin in the periosteum of the sternum, when excision of that bone may be, or rather has been, attempted, although the operation is not only immediately dangerous, but almost inevitably fatal, owing to the exposure of the parts beneath. Even if the surgeon be fairly positive that the sternum is the part diseased, it is impossible for him to diagnose what the conditions may be underneath, and how far other tissues of more vital nature may be involved. The only occasion in which the knife may be used is in those cases, which are exceedingly rare, but have been reported, where the growth starting from the periosteal or other tissue of the sternum erodes that bone, and is about to enter the space behind it. Under these circumstances, and these alone, is it permissible to remove any large mass of the mediastinal wall, and even here the proverb of the French, that "it is better to die of your doctors than your disease," is almost the only exeuse for surgieal interferenee.

TABLES

GIVING THE HISTORY OF ONE HUNDRED AND FIFTEEN (115) CASES OF MEDIASTINAL ABSCESS.

ABSCESS.

No.	Age.	Sex.	Cause.	Area Involved.	Other Parts Affected.	Chief Symptoms.	Duration.	Result.	By Whom and Where Reported.	Variety.	Primary Seat.	Occupation.	Remarks.
1	Adult	M.	...	Posterior mediastinum.	Left bronchus and œsophagus.	Dysphagia.	6 mos.	Death.	Bristowe. Trans. Path. Soc., Lond., IX, p. 46.	Gangrenous	Root of lung; abscess opened into œsophagus.	Not stated.	...
2	13	M.	Fracture of the sternum.	Anterior mediastinum.	Separation of sternal fragments and pulsating tumor between fragments.	Symptoms simulating aneurism.	Not stated.	Recovery.	Smith, quoting Warner. "Cases in Surgery." *Amer. Jour. Med. Sci*, April, 1873, p. 311.	Traumatic.	...	Not stated.	Abscess burst externally.
3	35	M.	Fall on chest.	Anterior mediastinum.	Not stated.	Chill, and swelling along jugular.	15 mos.	Recovery.	Gunther. *Oesterreich Zeitschrift für pract. Heilkunde*, 1859; also, Schmidt's *Jahrbücher*, CIII, p 60; also Prager *Vierteljahrschrift*, XLII, p. 113.	Traumatic.	...	Not stated.	Excision of 2d rib, and free escape of pus.
4	40	M.	...	Anterior mediastinum.	Caries of sternum.	Not stated.	Not stated.	Recovery.	Heyfelder. Traité de Resections, Paris, 1863. Reported by Velpeau, operated on by Lécat.	Not stated; probably cold.	...	Not stated.	Pus evacuated by incision.

No.	Age.	Sex.	Cause.	Area Involved.	Other Parts Affected.	Chief Symptoms.	Duration.	Result.	By Whom and Where Reported.	Variety.	Primary Seat.	Occupation.	Remarks.
5	57	M.	Struck by a log on chest.	Entire mediastinum.	Double pleurisy; intense pericarditis.	Dyspnœa; pain and tenderness; cough.	6 days.	Death.	Goodhart. Trans. Path. Soc., Lond. Vol. XXVIII, p. 37.	Traumatic.	...	Not stated.	...
6	44	M.	Lodgment of piece of meat in œsophagus for a short time.	Anterior and middle mediastinum.	Acute interstitial inflammation of lung.	Wasting; dysphagia and dyspnœa.	8 mos.	Death.	Goodhart. Trans. Path. Soc., Lond., XXVIII, p. 38.	Acute abscess?	...	Baker.	...
7	18	M.	Scrofulosis.	Anterior mediastinum.	Opened between 3d and 4th ribs; sternum carious; pericarditis; pleura and lung slightly inflamed.	Pain in chest and left shoulder-blade.	Not stated.	Death.	Pfeufer. Henle's und Pfeufer's *Zeitschrift*, I, 2; also, see *Schmidt's Jahrb. Splb.*, 4, p. 273.	Mediastinitis resulting in abscess.	...	Brewer.	...
8	55	F.	Phlegmonous erysipelas.	Anterior mediastinum.	Abscess perforated chest walls on level of 3d rib.	Fever and profound adynamia; a fluctuating tumor between the ribs and sternum and clavicle.	Not stated.	Death.	Racle. Traité du diagnost méd., p. 389.	Gangrenous	...	Not stated.	...
9	22	M.	Scrofulosis.	Posterior mediastinum.	Caries of occiput and atlas and bodies of 4th and 5th vertebræ.	Dyspnœa; pain in head and neck.	Seen for 5 weeks	Death.	Daudé. Les affections du mediastin. Paris, 1872, p. 79.	Scrofulous abscess.	...	Soldier.	Abscess contained 300 grms. of pus.

10	...	...	Scrofulosis.	Anterior mediastinum.	Abscess communicates with both sides of chest, pericardium and trachea.	Cough and dyspnœa.	...	Death.	Maclachlan. Trans. Med. Chir. Soc., new series, XV, old series, Vol. XXXIII, p. 201; also, see *Brit. and Foreign Med. Chir. Review*, p. 378, VII.	Scrofulous.	...	Not stated.	...
11	61	M.	Scrofulosis.	Anterior mediastinum.	Affected pericardium and formed tumor above clavicle; simulated aneurism of innominate or aortic arch.	...	...	Death.	Maclachlan. Royal Med. and Surg. Soc., Mar. 26th, 1850; also, Schmidt's *Jahrbücher*, XLIX, p. 43.	Scrofulous.	...	Sailor.	...
12	...	...	Pressure.	...	...	Pulse much weakened during inspiration owing to constriction of aorta.	...	Death.	*Year Book Med. and Surg.*, 1860, p. 220.	Traumatic.	...	...	...
13	...	...	...	Anterior mediastinum.	...	...	...	...	Wiedemann. *Year Book of Med. and Surg.*, 1862, p. 127; *L'Union Médicale*, 119, 1860; Schmidt's *Jahrb.*, Vol. 113, p. 307.	...	...	...	...
14	Middle aged.	M.	Fall on chest while carrying heavy weight.	Mediastinum; which space not stated.	Bruised muscles of chest walls.	Great pain and dyspnœa.	Not stated.	Recovery.	*London Med. Jour.*, Vol. II, 1781, p. 405; case seen in 1751.	Traumatic.	...	Porter.	...
15	5½ mos.	M.	Tuberculosis.	Glands of anterior mediastinum.	Lungs studded with tubercle.	Cough and dyspnœa.	3½ mos.	Death.	Ballard. Trans. Path. Soc., Lond., IX, p. 38; also *Lancet*, 1858, p. 149, Feb. 6th.	Tuberculous abscess.	...	Not stated.	...

No.	Age.	Sex.	Cause.	Area Involved.	Other Parts Affected.	Chief Symptoms.	Duration.	Result.	By Whom and Where Reported.	Variety.	Primary Seat.	Occupation.	Remarks.
16	Not stated.		...	Glands of anterior mediastinum.	Originated in deep seated glands along carotid.	Distinct pulsation over carotid simulating aneurism.	Not stated.	Death.	Smith, quoting Spence. *Amer. Jour. Med. Sci.*, April, 1873, p. 311.	Cold abscess.	...	Not stated.	...
17	Not stated.		...	Posterior mediastinum	9th and 11th dorsal vertebræ were carious.	Incessant pain in back; inability to stand.	Not stated.	Death.	Smith. *Amer. Jour. Med. Sci.*, April, 1873, p. 315.	Not stated.	...	Not stated.	Death due to rupture of one of the vertebral arteries.
18	62	M.	Contusion.	Anterior mediastinum.	Pus cavity communicated with right pleural cavity.	Dyspnœa; pain, chill and high fever; pleural exudate on right side.	10 days.	Death.	Meissner. *Schmidt's Jahrbücher*, vol. CXIII, p. 308.	Traumatic.	...	Not stated.	...
19	"Child."		Emphysema after tracheotomy for croup.	Anterior mediastinum.	Tissues behind trachea.	Pain, oppression and lividity of face.	9 days.	Death.	Martini. *Schmidt's Jahrbücher*, vol. CII, p. 91.	Traumatic.	...	...	...
20	5½	F.	Emphysema following tracheotomy.	Anterior mediastinum.	Gangrene of edge of wound.	Skin livid; rapid pulse.	6 days.	Death.	Martini. *Schmidt's Jahrbücher*, vol. CII, p. 91.	Traumatic.	...	Child.	...
21	58	M.	...	Anterior mediastinum.	Not stated.	Pain and dyspnœa.	1 year.	Recovery.	Gunther. *Oesterreich Zeitschrift f. Pract. Heilkunde*, 1859.	Not stated.	...	...	...
22	33	M.	...	Anterior mediastinum.	Liver fast to diaphragm: small abscess in liver; pus in pericardium.	Not stated.	Not stated.	Death.	*Schmidt's Jahrbücher*, CXL, p. 44.	Not stated.	...	...	...

23	Not stated.		...	Anterior mediastinum.	Pus in pericardium and its walls thickened; bronchial glands indurated; tubercles in œsophagus.	Asphyxia.	5 days under observation.	Death.	Kretschmar. *Schmidt's Jahrbücher*, vol. CXXVI, p. 171.	Traumatic, due to canula in trachea.	...	Not stated.	Tracheotomy; canula produced abscess.
24	24	M.	...	Middle mediastinum.	Perforated œsophagus; disease of right bronchus produced gangrenous sputum.	Chills, fever; icterus and pain in hepatic region.	Not stated.	Death.	Bussard. *Gaz. Hebdom.*, 1874, p. 459; also *Rev. de Sci. Med.*, vol. V, p. 122.	Not stated.	...	...	...
25	4	M.	Bronchopneumonia.	Posterior mediastinum.	Abscess reached from 6th cervical to 5th dorsal vertebræ.	Dyspnœa and quiek respiration.	Short, not stated.	Death.	Jarisch. *Jahrbüch. f. Kinderheitkund*, VIII, Jahrg, Oct.3, 1874, p. 188; also *Rev. des Sci. Med.*, vol. V, p. 609.	"Congestion abscess."	...	Child.	Abseess was semicaseous.
26	...	...	...	Posterior mediastinum.	Vertebræ.	...	...	Death.	*Lyons Med.*, No. 16.	...	...	...	...
27	52	M.	Typhoid fever.	All three spaces.	Larynx and œsophagus infiltrated.	Constant pain increased on deglutition.	36 hours after symptoms of abscess appeared.	Death.	Fraentsch. *Berlin Klin. Wochen.*, 1874, No. 9; also *Rev. des Sci. Med.*, vol. IV, p. 494.	Acute.	...	Not stated.	...
28	25	M.	Had a phagedenie ulcer on the scrotum?	Anterior mediastinum.	Perforated the sternum.	Pain and dyspnœa.	52 days.	Recovery.	Smith. *Lancet*, London, vol. I, p. 195, 1877; *Rev. des Sci. Med.*, IX, p. 637.	Acute.	...	Not stated.	...
29	...	...	...	Anterior mediastinum.	...	...	...	...	Boechat. *Rev. Méd. de Suisse*, p. 459, 1881.	Aeute.	...	Not stated.	Followed extirpation of thyroid.

No.	Age.	Sex.	Cause.	Area Involved.	Other Parts Affected.	Chief Symptoms.	Duration.	Result.	By Whom and Where Reported.	Variety.	Primary Seat.	Occupation.	Remarks.
30	58	M.	...	Anterior mediastinum.	Broke into bronchus.	Suffocation, which came on suddenly without the premonitory chill and fever.	...	Recovery.	Terry. *Brit. Med. Jour.*, July 19th, 1873, p. 60.	Acute?	...	Coach painter.	...
31	57	M.	Blow on chest.	Though under the heading of suppurative inflammation of mediastinum I cannot find that anything else but the pericardium was affected.	Right pleura contained 2 qts. of pus. Pericarditis.	Great pain and cough.	Soon died.	Death.	Goodhart. *Brit. Med. Jour.*, 1876, p. 682, Nov. 25th.	Acute.	...	Not stated.	...
32	44	M.	Pleurisy 3 mos. before.	Anterior mediastinum and sternum.	Abscess at xiphoid cartilage.	Not stated.	7 mos.	Recovery.	Mém. de l'Acad. de Chirurg, tom. IV, p. 570. Cases occurred in 1765.	Cold abscess.	...	Not stated.	...
33	Boy.		...	Mediastinal glands.	Opened into trachea with escape of pus.	Sudden dyspnœa while at play; cyanosis.	"Short"	Death.	Johnson. *Brit. Med. Jour.*, Oct. 27th, 1877, p. 592.	Probably scrofulous.	...	...	Had caseous bronchial glands
34	36	M.	...	Anterior mediastinum.	Pleurisy, necrosis of sternum.	Not stated.	Not stated.	Death.	Fergusson. *Med. Times*, Feb. 1817.	...	...	Not stated.	Resection of sternum for necrosis.

35	17	M.	Struck in chest by red-hot iron	Anterior mediastinum.	Sternum contused and burnt.	Pain.	5 mos.	Recovery.	Walker. *Brit. Med. Jour.*, p. 63, Jan. 12th, 1884.	Traumatic.	...	Iron worker.	...
36	18 mos.	M.	...	Suppurating tuberculous mediastinal glands.	Opened externally at supra-sternal notch and right second interspace.	Wasting and night sweats.	4 mos.	Death.	Smith and Lankester. *Med. Times and Gaz.*, Oct. 18th, 1884, p. 539.	Tubercular.	...	Child.	...
37	Young man.		Shot in chest.	Chiefly anterior mediastinum.	Fracture of sternum.	Pain; spitting of blood; no fever; appetite fair.	2½ mos.	Recovery.	Rognetta. *Ann. de Therapeutique*, 1848, p. 190–291.	Traumatic.	...	Not stated.	...
38	Adult.	M.	Shot in chest.	Anterior mediastinum.	Fracture of sternum.	Pain in chest; dyspnœa; tumefaction in region of sternum.	...	Recovery.	Mém. de l'Acad. de Chirurg., tom. IV, p. 545.	Traumatic.	...	Soldier.	Occurred in 1754.
39	Adult.	M.	Blow on chest.	Anterior mediastinum.	Pericardium altered by pus.	Pain.	4 mos.	Recovery.	Mém. de l'Acad. de Chirurg., tom. IV, p. 559.	Traumatic.	...	...	Excision of sternum for.
40	Adult.	M.	Blow on chest.	Anterior mediastinum.	...	...	...	Recovery.	Stalpart von der Viel Centurie, 1 ser., obs. XIX, tom. I, p. 1727.	Traumatic.	...	...	Trepanned sternum.
41	22	F.	"External" cause.	Anterior mediastinum.	Ulcer and fistulous opening, resulting from caries of sternum.	...	...	Recovery.	Mém. de l'Acad. de Chirurg., tom. IV, p. 558.	Traumatic.	...	...	...
42	Adult.	M.	Fall from a horse.	Anterior mediastinum.	...	...	...	Death.	Abeille. Traité des Hydropsies et de Kysts, p. 514.	Traumatic.	...	Soldier.	Contusion of sternum.
43	Adult.	F.	Fall on a staircase.	Anterior mediastinum.	Destruction of upper part of sternum.	High fever; a fluctuating tumor at upper part of sternum.	...	Recovery.	Mém. de l'Acad. de Chirurg., tom. IV, p. 551.	Traumatic.	...	Servant girl.	...
44	Adult.	M.	Fall.	Anterior mediastinum.	Caries of sternum.	Fever; anorexia and constant cough.	Not stated.	Death.	Mém. de l'Acad. de Chirurg., tom. IV, p. 551.	Traumatic.	...	...	Operation for relief.

No.	Age.	Sex.	Cause.	Area Involved.	Other Parts Affected.	Chief Symptoms.	Duration.	Result.	By Whom and Where Reported.	Variety.	Primary Seat.	Occupation.	Remarks.
45	Boy.	...	Fracture of ribs by a fall.	Anterior mediastinum.	Caries of sternum.	Not stated.	19 years.	Recovery.	Daudé. Les Affections de Mediastin. Paris, 1872.	(Traumatic cold?)	...	Nobleman.	Fall in early infancy.
46	Young adult.	F.	...	Anterior mediastinum.	Fistulous opening in chest walls.	...	3 years.	Death.	Roux. Dict. de Méd., in 21 vols. Art. Caries.	Not stated.	...	Not stated.	...
47	45	M.	Severe toil (?)	Anterior mediastinum.	Caries of sternum.	Great pain under sternum, with œdema in same place; asthma; fluctuation in chest; anorexia.	6 mos.	Recovery.	Daudé. Les Affections de Mediastin. Paris, 1872, p. 51.	Probably scrofulous?	...	Not stated.	...
48	42	M.	...	Anterior mediastinum.	Sternum; 3 openings, viz., between 3d, 6th and 7th ribs; burrowed down to xiphoid cartilage and epigastric muscles.	Fever; chills; oppression; fetid pus.	A little over 6 mos.	Recovery.	Mém. de l'Acad. de Chirurg., IV, 561.	Probably scrofulous.	...	...	Trepanned sternum.
49	36	M.	...	Anterior mediastinum.	Anterior plate of sternum destroyed by caries.	Not stated.	Not stated.	Death.	Roux. Dict. de Méd., vol. 21. Art. Caries.	Chronic.	..	...	...
50	Adult.	M.	...	Anterior mediastinum.	Fistula at border of sternum; disease of 3d costal cartilages.	Pain under sternum.	...	Recovery.	Boyer. Traité des Mal. Chir., III, p. 531.	Cold abscess.	...	...	...
51	40	M.	...	Anterior mediastinum.	Destroyed cartilage of second rib.	Diarrhœa; intense fever; pale and anæmic.	3 mos.	Recovery.	Gunther. *Oesterreich. Zeitschr. f. Pract. Heilkunde*, March, 1856.	Acute.	...	Professor.	...

52	20	M.	Pleurisy.	Anterior mediastinum.	Sternum affected.	Dyspnœa; heetie fever; coughed up pus.	8 years.	Recovery.	Van Swieten. Mém. de l'Acad. de Chirurg., III, 57.	Cold abscess.	...	...	...
53	Adult.	M.	Pneumonia.	Anterior mediastinum.	Opened between ribs of left side.	Chills and fever.	5 mos.	Recovery.	Mém. de l'Acad. de Chirurg., tom. IV.	Cold abscess.(?)	...	Soldier.	...
54	Adult.	M.	Pleurisy.	Anterior mediastinum.	Spontaneously opened near sternum.	Cough and expectoration.	6 mos.	Recovery.	Daudé. Les Affections du Mediastin. Paris, 1872.	Cold abscess.	...	...	...
55	22	M.	Pleurisy.	Anterior mediastinum.	...	Oppression; fever and pain; colliquative sweats; wasting; fluctuating tumor by sternum.	6 mos.	Recovery.	Mém. de l'Acad. de Chirurg., tom. IV, 569.	Cold abscess.	...	...	Seen in 1765.
56	Adult.	F.	Smallpox.	Posterior mediastinum.	Multiple abscess of lungs, vertebral column and pre-vertebral muscles.	Not stated.	...	Death.	Vigier. *Jour. Hebdomadaire*, 1834, tom. II, p. 176.	Metastasis.	...	Servant girl.	No trace of phlebitis.
57	28	M.	Syphilitic.	Anterior mediastinum.	Fistulous opening in chest.	Fever and general blood-poisoning.	6 mos.	Recovery.	Vidal de Cassis. Mém. de la Soc. de Chirurg., IV.	Metastasis.	...	Hog butcher.	...
58	16	F.	Exposure to cold.	Anterior mediastinum.	...	Malnutrition, chill, fever and redness of right knee.	5 mos.	Recovery.	Daudé. Les affections du mediastin. Paris, 1872, p. 57.	Metastasis.	...	...	Rheumatism is the primary cause (?)
59	...	...	...	Anterior mediastinum.	Abscess under xiphoid cartilage.	...	4 years.	Recovery.	Daudé. Les affections du mediastin, p. 61. Paris, 1872.	Acute.(?)	...	Physician	...
60	20	M.	...	Anterior mediastinum.	...	...	2 mos.	Recovery.	Lamartiniere. Mém. de l'Acad. de Chirurg., IV, 552.	Suppurating steatomatous tumor.	...	...	...

No.	Age.	Sex.	Cause.	Area Involved.	Other Parts Affected.	Chief Symptoms.	Duration.	Result.	By Whom and Where Reported.	Variety.	Primary Seat.	Occupation.	Remarks.
61	18	M.	Exposure to cold and wet.	Anterior mediastinum.	Luxation of manubrium and ensiform cartilages; 3d rib separated from sternum; lungs and pleura adherent to pericardium, which contained serum.	Marasmus.	Some mos.	Death.	Duncan Reid. Annales de Schmidt, 1835, Vol. I.	...	...	Courier.	...
62	35	M.	...	Anterior mediastinum.	No autopsy.	Pain in chest; chill; oppression and anorexia.	17 mos.	Death.	Gunther. *Oesterreich Zeitschrift f. Pract. Heilkunde*. Wien, 1859, No. 10, March 11th.	Not stated.	...	Painter.	...
63	58	M.	Caught cold.	Anterior mediastinum.	Tumor was under clavicle.	Pain in chest; anorexia and dyspnœa.	6 mos.	Recovery.	Gunther. *Oesterreich Zeitschrift f. Pract. Heilkunde*, March 11th, 1859, p. 153.	Acute.	...	Merchant.	Incision made to relieve pus.
64	...	...	...	Posterior mediastinum.	Burrowed down into chest.	...	...	Death.	*Arch. gén. de méd.*, 1836, 2d series, tom. XI, p. 500.	...	...	...	...
65	Adult	M.	Shot in neck.	Posterior mediastinum.	Abscess burrowed down and affected pleura.	...	...	Not stated.	Larrey. Daudé. Les Affections du Mediastin. Paris, 1872.	Traumatic.	...	Army officer.	...
66	...	...	...	Entire mediastinum.	Passed along trunks of great blood vessels into thorax, and there produced great inflammation.	...	Very short after pus reached thorax.	Death.	Laude. Daudé. Les Affections du Mediastin, p. 16.	...	Began in lateral wall of pharynx.	...	...

67	20	M.	...	Anterior mediastinum.	Sternum carious; thyroid greatly altered and enlarged; left lung inflamed.	Pain in chest; symptoms of pulmonary catarrh; fever; abscess pulsated.	About 4 years.	Death.	Gaultier. *Journ. gén. de méd.*, Vol XLIV, p. 278, 1812.	Not stated, probably cold.	...	Musician.	...
68	...	...	Injury.	Anterior mediastinum.	Pleurisy with effusion.	Severe pain in chest; quick and shallow breathing.	5 mos.	Recovery.	Walker. *Med. Press and Circular*, 1884, N. S, XXXVII, p. 45.	Traumatic.	...	Iron worker.	Red hot bar coming from rolls struck chest.
69	3 mos., infant.		...	Posterior mediastinum.	Pressed on trachea.	Sudden dyspnœa; lividity of face.	6 or 7 hours after first symptoms.	Death.	Turner. *Lond. Lancet*, 1887, I, 17.	Cold. (?)	...	...	...
70	24	M.	...	Posterior mediastinum.	Œsophagus communicated with mediastinum.	Cough; dyspnœa and pain in chest.	Not stated.	Not stated.	*Berliner Klin., Wochen.*, XIII, 19, 1876.	Secondary.	...	...	...
71	24	M.	...	Posterior mediastinum.	Opened into œsophagus and trachea.	Muco-purulent expectoration and high fever; dyspnœa.	About 3 mos.	Death.	Clutton. St. Thomas' Hosp. Reports, 1886, XV, p. 244.	Cold. (?)	...	...	...
72	11	M.	Metal pen in throat.	Posterior mediastinum.	Opening from mediastinum into pharynx.	Pain in chest; pus in expectorated fluid.	9 days.	Recovery.	See. *Bull. de la Soc. de Chirurg.*, N.S.,I, p.271,1875.	Acute.	...	...	...
73	49	M.	...	Posterior mediastinum.	Emphysema of lung with abscess of œsophagus.	Pain in epigastrium; dyspnœa and cyanosis.	14 days.	Death.	Anguier. *Lyon Méd.*, No. 19.	Acute abscess.	...	...	...
74	24	M.	Bayonet wound.	Mediastinum.	Injury between 3d and 4th ribs.	Hemoptysis; great pain; dyspnœa; pus in sputum.	Some months.	Recovery.	Boyer. *Traité des Méd. Chir.*, tom. VII, p. 220.	Traumatic.	...	...	...
75	Adult	M.	Bullet wound.	Anterior mediastinum.	...	Dyspnœa and pain in chest.	...	...	Petit. Œuvres Chirurg.	...	...	Soldier.	...
76	Adult	M.	Blow on chest.	Anterior mediastinum.	Lungs adherent on right side of sternum.	Pain and dyspnœa; pain on inspiration.	4 years.	Death.	Daudé. Les Affections des Mediastin.	Traumatic.	...	...	...
77	Adult	M.	Exposure to cold.	Anterior mediastinum.	...	Dyspnœa, cough and burning in chest.	20 days.	Death.	Laz. Riviere. Obs. cent., I, obs. 60.	Acute.	...	...	...

No.	Age.	Sex.	Cause.	Area Involved.	Other Parts Affected.	Chief Symptoms.	Duration.	Result.	By Whom and Where Reported.	Variety.	Primary Seat.	Occupation.	Remarks.
78	Adult	M.	Erysipelas.	Anterior mediastinum.	Thorax walls.	Those of erysipelas.	...	Death.	Gintrac. Cours theorique et Chir. de path., tom. v, p. 52.	Acute.	...	...	...
79	...	...	Erysipelas.	Anterior mediastinum.	Anterior part of neck and thorax walls.	Those of erysipelas.	...	Death.	Gintrac. Cours theorique et Chir. de path., v, p. 52.	Erysipelatous.	...	...	Gelatinous mass in mediastinum.
80	35	M.	...	Anterior mediastinum.	Abscess of mediastinum at 2d rib at right edge of sternum.	Anorexia; insomnia and fever.	3 mos.	Death.	Keen. Trans. Path. Soc., Phila., VII, p. 161.	Cold.	...	Baker.	...
81	27	F.	...	Posterior mediastinum.	Œsophagus. (?)	Cough; great pain; violent vomiting.	1½ mos.	Recovery.	Waxham. *Chicago Med. Jour. and Examiner*, 1879, Vol. XXXVIII, p. 273.	Probably cold.	...	Not stated.	Suddenly vomited pus and recovered.
82	...	...	...	Anterior mediastinum.	Caries of sternum.	Oppression.	...	Death.	Chassaignac. Traité de la Suppuration, tom. II, p. 330.	Due to emphysema.	...	...	Opened by bistoury.
83	24	M.	...	Middle and posterior spaces.	Right lung adherent to sternum; bronchial artery ran through abscess wall.	Chills, fever, anorexia, jeterus and diarrhœa.	About 3 mos.	Death.	Bertrand. *Gaz. Hebdomadaire*, 2 Ser., XI, 29, 1874, p. 459.	Acute.	...	Soldier.	...
84	8	M.	...	Glands of posterior mediastinum.	Gland on right side was greatly enlarged, caseous and suppurating; vagi adherent to it; broncho-pneumonia and acute pleurisy at both bases.	Dyspnœa and cough; vomiting.	About 15 days.	Death.	Goodhart. *Brit. Med. Jour.*, April 12th, 1879.	Cold (?) abscess.	...	...	...

85	A young lad.		...	Anterior mediastinum.	Pyopericardium.	Great thirst; pulsating tumor of sternum.	1½ mos.	Death.	Rich and Bowen. *Liverpool Med. Chir. Jour.*, 1882, II, 344.	Acute abscess.	...	...	...
86	...	...	...	Anterior mediastinum.	Sternum carious.	Pain in chest; oppression and cough.	...	Recovery.	Hawkins. *Lond. Med. Gaz.*, 1847, N. S., V, p. 62.	Metastatic.	Lupus of face, followed by erysipelas and abscess.	...	...
87	25	F.	...	Anterior and middle mediastinum.	Pleurisy is marked and membranes are adherent to pericardium, extraordinarily diminishing the capacity of the ventricles.	Dyspnœa; cough; abundant expectoration; anorexia; pain in chest; œdema of limbs.	Not clearly stated.	Death.	Perera. *Eschola stic Med* Lisbon, 1854, V, 93.	Acute.	Mediastinum.	...	...
88	34	F.	Shot in chest.	Anterior mediastinum.	Caries of sternum.	Pain in chest; constantly ailing.	6 years	Recovery.	Marks. Proc. Amer. Surg. Assoc. Phila., 1883, I, p. 307.	Traumatic.	...	Soldier.	Trephined, and abstracted ball.
89	20	M.	Exposure to intense cold.	Anterior mediastinum.	Fistulous openings between 2d and 3d ribs.	Great pain; syncope; dyspnœa and cough; pus in chest.	Not stated.	Recovery.	Ferd. del Busto. *Gaz. Med.* Madrid, 1849, V, p. 250–257.	Acute.	Mediastinum.	Soldier.	...
90	23	M	...	Anterior mediastinum.	Osteo-myelitis of sternum; also of 3d, 4th and 5th ribs, and costal cartilages necrosed.	Hectic fever; anorexia; pulsating tumor in anterior part of chest.	3 mos.	Death.	Chalot. *Gazette Hebdomadaire de Sci. Med.* Mont., 1880, II, p. 433.	Chronic struma. (?)	Mediastinum and sternum.	Soldier.	...
91	20	M.	Rheumatism.	Anterior mediastinum.	...	Pain and dyspnœa; great oppression.	Not stated.	Death.	Traube. *Gesammelte Beitrage z. Path. Med. and Phys.* Berlin, 1878, III, p. 351.	Acute (articular rheumatic).	Mediastinum.	...	...
92	57	M.	...	Anterior mediastinum	No post-mortem.	Cough; fever; hectic flushes.	Several mos.	Death.	Bauer. *St. Louis Med. Record*, 1876–77, III, p. 221.	Cold abscess.	Mediastinum.	...	No post-mortem.

No.	Age.	Sex.	Cause.	Area Involved.	Other Parts Affected.	Chief Symptoms.	Duration.	Result.	By Whom and Where Reported.	Variety.	Primary Seat.	Occupation.	Remarks.
93	32	F.	...	Anterior mediastinum.	Fistulous opening of long standing; disease of under plate of sternum.	Pain in chest; sweatings.	Not stated.	Death.	Riberi. Raccolta d. opere minori etc. Torini, 1851, I, p. 52.	Cold abscess.	Sternum.	...	...
94	25	M.	...	Anterior mediastinum.	...	Simulated aneurism; pain in chest.	Several mos.	Recovery.	Paradis. *Gaz. d. Hôp.* Paris, 1834, VIII, p. 477.	Cold abscess.	Mediastinum.	Soldier.	...
95	48	F.	...	Anterior mediastinum.	Hemorrhagic cyst in mediastinum.	Pain; suffocation; enlarged veins.	Seen for 1 mo.	Death.	Seutin. *Presse Méd. Belge.* Brux., 1853, V, p. 95.	Cold abscess.	Mediastinum.	...	...
96	16	M.	...	Mediastinum.	...	Fever, chills, and pain in chest.	...	Recovery.	Weber. *Zeitsch. Med. Chirurg. und Geburtsh.* Magdeburg, 1856, X, p. 58.	Cold abscess.	Mediastinum.	...	...
97	17	M.	Carbuncle and erysipelas.	Middle mediastinum.	Pressed on vagi; lungs engorged.	Pain; dyspnœa and cardiac palpitation; disturbed respiratory movements	...	Death.	Winsor. *Boston Med. and Surg. Jour.*, 1867, LXXVI, p. 63.	Metastatic.	Face and upper lip.	...	...
98	49	M.	...	Posterior mediastinum.	Œsophagus; congestion of lung; emphysema of mediastinal tissues.	Anorexia; vomiting; pain in epigastrium; dyspnœa; cyanosis of face; cough; cold extremities.	1 mo.	Death.	Anguier. *Lyon Méd.*, 1875, XIX, p. 51.	Acute. (?)	Œsophagus.	...	...
99	22	F.	...	Posterior and middle mediastinum.	...	Dyspnœa and cough.	...	Recovery.	Le Bêle. *Bull. de la Soc. de Méd. de Sarthe*, 1882. La Mans, 1884, 25.	(?)	Mediastinum.	...	See also No. 5 in Hematoma.

100	...	...	...	Mediastinum.	...	...	...	...	Van Hoesslin. *München. Med. Wochenschrift*, 1887, XXXIV, p. 123.	...	...	...	...
101	...	...	...	Mediastinum.	...	...	...	...	Goodhart, quoting Pye-Smith. Trans. Path. Soc. Lond., XXVIII, p. 40.	Chronic caseous mediastinitis.	...	...	...
102	...	...	...	Mediastinum.	...	...	...	...	This and all the following cases were compiled by Pye-Smith in 1873, 1874 and 1875, as occurring in Guy's Hospital. Nothing further can be found in the Hospital Reports concerning them.	Chronic caseous mediastinitis.	...	...	...
103	...	...	...	Mediastinum.	...	...	...	...		Chronic caseous mediastinitis.	...	...	...
104	...	...	...	Mediastinum.	...	Occurred during Bright's Disease.	...	...		Acute.	...	...	...
105	...	...	...	Mediastinum.	Spread down from neck.	Inflammation and abscess in neck.	...	...		Acute.	Neck.	...	...
106	...	...	...	Mediastinum.	Spread up from abdomen.	Inflammation of abdomen.	...	...		Acute.	Abdomen.	...	...
107	...	...	...	Mediastinum.	Spread down from neck.	...	...	...		Acute.	Neck.	...	...
108	...	...	...	Mediastinum.	Spreading down from neck.	Inflammation of tissues of neck.	...	...	Goodhart. Trans. Path. Soc. Lond., XXVIII, p. 40.	Acute.	Neck.	...	...
109	...	...	...	Mediastinum.	Spread down from tissues of neck.	Inflammation of tissues of neck.	...	...	Same as above.	Acute.	Neck.	...	...
110	...	...	...	Mediastinum.	Spread from caries of petrous portion of temporal bone along the jugular vein.	Disease of petrous portion of temporal bone.	...	...	Same as above.	Acute.	Temporal bone.	...	...

No.	Age.	Sex.	Cause.	Area Involved.	Other Parts Affected.	Chief Symptoms.	Duration.	Result.	By Whom and Where Reported.	Variety.	Primary Seat.	Occupation.	Remarks.
111	...	...	...	Posterior mediastinum.	Bronchial glands were caseous.	...	...	Death.	*Cincinnati Lancet and Clinic.*	Chronic.	Bronchial glands.	...	...
112	...	...	...	...	...	...	...	...	Türk. Klin. der Krankheiten des Kehlkopfs und der Luftröhre. Wien, 1866.	...	...	...	...
113	...	...	...	...	...	...	...	...	*Würzberger Med. Zeitschrift*, 1861–62, 2. und 3. Band.	...	...	...	...
114	...	...	...	...	...	...	...	...	Malet. Thèse de Paris, July 28th, 1887.	...	...	...	Pulsatile abscess.
115	...	...	...	...	Burrowed down to liver.	...	...	Death.	Brueu. Trans. Path. Soc. Phila., 1887, November.	...	...	...	...

TABLES

GIVING THE HISTORY OF SIXTEEN CASES OF NON-SUPPURATIVE MEDIASTINITIS.

MEDIASTINITIS (*Non Suppurative*).

No.	Age.	Sex.	Cause.	Area Involved.	Other Parts Affected	Chief Symptoms.	Duration.	Result.	By Whom and Where Reported.	Variety.	Primary Seat.	Occupation.	Remarks.
1	Married adult.	F.	...	Mediastinum.	..	Pain in chest; shortness of breath and fever.	...	Recovery.	Schaeffer. *Hufeland Jour. der pract. Arzneikunde*, Vol. XXXV, B, p. 15.	Mediastinitis.	Mediastinum.	Housewife.	...
2	22	M.	Auger pressed on chest.	Anterior mediastinum.	Pericardium; aorta is decreased in calibre.	High fever; swelling of feet; disturbed cardiac rhythm.	7 weeks.	Death.	Wiedemann. Inaug. Abhandlung. Tübingen, 1856. *Virchow's Archiv*, XII, p. 349.	Mediastinitis.	Mediastinum.	Auger borer.	...
3	22	M.	Pressure on chest.	Anterior mediastinum.	Pulmonary artery and pericardium bound together; pressed on aorta.	Pain; œdema and dyspnœa.	32 days.	Death.	Wiedemann. *Schmidt's Jahrbücher*, Vol. CXIII, p. 307, 1862.	Fibrinous mediastinitis.	Mediastinum.	Wagon maker.	...
4	20	F.	Pleurisy.	Pericardium and mediastinum.	Pericardium was enormously thickened; adherent to heart and surrounding tissues.	Ascites; hurried respiration and typhoid symptoms.	7 mos.	Death.	Fox. *Brit. Med. Jour.*, Oct., 1877, p. 471.	Mediastino-pericarditis.	Pericardium.	Shirt maker.	...
5	9	M.	...	Pericardium and mediastinum.	Thickening of bronchi; increase of fibrous tissues in lungs; hepatitis.	...	15 mos.	Death.	Hutton. *Brit. Med. Jour.*, Mar. 18th, 1884, p. 462.	Mediastino-pericarditis.	Pericardium and mediastinum.	...	...

No.	Age.	Sex.	Cause.	Area Involved.	Other Parts Affected.	Chief Symptoms.	Duration.	Result.	By Whom and Where Reported.	Variety.	Primary Seat.	Occupation.	Remarks.
6	Adult.	M.	Erysipelas.	Mediastinum.	...	Those of erysipelas.	...	Death.	Tenion. Thèse de Paris, 1807, No. 84, p. 6.	Mediastinitis.	Thorax walls.	...	...
7	22	M.	Pressure on sternum.	...	...	Pain in chest; oppression; fever.	9 weeks.	Death.	Virchow. *Arch. f. Path. Anat. and Physiol.*, 1857, tom. XII.	Mediastinitis.	Mediastinum.	Cartwright.	...
8	Adult.	M.	...	Entire mediastinum.	Contraction of trachea; heart adherent to pericardium; lungs reddened; œsophagus occluded and reddened.	Pain in chest under sternum; violent cardiac palpitation.	...	Death.	Portal. Anat. Méd., tom. V, p. 28.	Mediastinitis.	Mediastinum.	...	...
9	...	..	...	Thickening of lateral walls of mediastinum.	Thickening of pleuræ.	...	...	Death.	Portal. Anat. Méd., tom. V.	Mediastinitis.	Mediastinum.	...	...
10	36	M	...	Anterior mediastinum.	...	...	18 mos.	Death.	Corvisart. *Jour. de Méd.*, tom. II, p. 3.	Mediastinitis.	Mediastinum.	...	...
11	Adult.	M.	...	Posterior mediastinum.	Left vagus involved; glands infiltrated.	Cough constant; expectoration and hoarseness.	...	Death.	Richet. Anat. Medico-Chir., 1855, p. 521.	Mediastinitis.	Mediastinum.	...	...
12	20	M.	...	Anterior mediastinum.	Large amount of serum in plenræ; congestion of lungs; cheesy mass attached to pericardium.	Palpitation of heart; icterus; pain; œdema of chest; dyspnœa.	About 14 mos.	Death.	Desnos. *Bull. Soc. méd. de Paris*, 1880, p. 503.	Mediastino-pericarditis calleuse.	Mediastinum and pericardium	...	...

13	...	...	...	...	...	...	...	...	Renon. *Gaz. Hebdomadaire, etc.* Paris, 1886, 2, S. XXIII, 37, 56.	Mediastinitis.	Mediastinum.	...	...
14	22	M.	...	Entire mediastinum.	Pleuritis; pericarditis and fibrinous exudate, which pressed on veins and made a hum.	Pain in chest; bruit in chest; venous hum; oppression.	...	Death.	Cantilena. *Gior. veneto di sc. med. Venezia*, 1874, 3, S. XXI, pp. 37-40.	Callous mediastinopericarditis.	Mediastinum.	...	...
15	10	M.	...	Middle mediastinum particularly.	Glands about trachea matted together, involving the large blood vessels; adherent to pericardium.	Face and abdomen swollen; veins on chest prominent.	A short time.	Death.	Abstract of Med. and Surg. Cases, General Hospital for Sick Children, 1883. Pendlebury, Manchester, 1884.	Mediastinitis.	Mediastinum.	...	..
16	...	...	...	Mediastinum.	Exudative bilateral pleurisy.	...	...	Death.	Rivalta. Morgagni, Mai, 1887.	Mediastinopericarditis, fibrous.	Mediastinum.	...	...

SUPPURATIVE AND NON-SUPPURATIVE MEDIASTINITIS.

In the mediastinum we may have two varieties of inflammation, one of which ends by a breaking down and suppuration of the tissues involved, the other passing away by resolution and absorption.

In the past the term mediastinitis was frequently applied to an inflammation of those portions of the pleuræ which form the lateral boundaries of this space, but at the present time this faulty designation is fortunately no longer used, since such a condition of affairs is little more than a pleurisy. A pleurisy of this character is almost impossible to diagnose during life, and may very closely simulate the non-suppurative form of inflammation, or even the suppurative.

As long ago as the time of Galen abscess in this region was known and recognized, and this author recorded a case of it following a wound.

At a much later day, but nevertheless several hundred years ago, Van Swieten recorded a similar case, the result of primary inflammation of the part, and he has been followed by Balch, Columbus, Linguet, Vicq D'Azyr, David, Blançard, De Fabrici, and Portal, and by a very numerous body of recorders of much later date.

The etiological factors of the suppurative variety belong generally to the traumatic or idiopathic group, but the number of causes almost equal the number of cases. Erysipelas and kindred affections often aid in the production of mediastinitis.

The question as to whether any cases are ever purely idiopathic has been raised with the same force against inflammation here as elsewhere, but while it is exceedingly difficult to comprehend how a purely idiopathic inflammation can begin, we have certainly a sufficient number of cases, which apparently belong to this class, to prevent us from throwing it aside as a cause.

While trauma is the cause assigned by the patients in a large number of instances, "taking cold" seems also to be regarded both by the sufferer and physician in many cases as a prime factor, and it is not hard to understand that such a circumstance, together with slight depression of vitality in a localized area,

might be followed by serious consequences. Wounds of the mediastinum have been in the past very frequently the exciting cause of mediastinal abscess, particularly when the injury was due to a stab or sabre stroke.

In the civil war in America a large number of cases suffering from gunshot wound of this region, involving this space, were observed, but abscess very rarely followed, even though the injuries were severe enough to expose the mediastinal cavities and the pericardial sac. This may have been due to the free drainage which was of necessity present, the older wounds being, as a general rule, of the punctured variety.

Aside from acute suppurative inflammation of the mediastinum, we may also have chronic suppuration or cold abscess, or, in other words, scrofulous disease of the tissues and glands, generally occurring in the anterior mediastinum and sometimes in the posterior. It is the general belief of the profession that the posterior space is the most frequently affected by cold abscess, while the other spaces suffer chiefly from the acute form; but this belief is only partly true, as is seen by the statement made in a few more lines.

There is still another cause of mediastinal abscess which deserves notice, namely, certain of the exanthemata, chief among which may be mentioned measles and typhoid or enteric fever.

The influence of age and sex on the development of this variety of limited inflammation is of considerable moment, playing a more important rôle in this disease than in any of the others.

Of the one hundred and fifteen cases of mediastinal abscess collected by the writer, seventy-seven permit of analysis.

Beginning with those cases occurring in males, we find that out of fifty-eight cases there were—

30 cases of *acute* abscess in the anterior mediastinum.
4 " " " posterior mediastinum.
2 " " " entire mediastinum.
2 " " " mediastinum, which space not stated.
20 cases of *chronic* abscess in the anterior mediastinum.
8 " " " posterior mediastinum.
1 " " " entire mediastinum.

Of these,	6	cases	were	between	1 and 10 years.
	9	"	"	"	10 and 20 "
	24	"	"	"	20 and 30 "
	11	"	"	"	30 and 40 "
	8	"	"	"	40 and 50 "
	6	"	"	"	50 and 60 "
	2	"	"	"	60 and 70 "

Or to make an average, we find that mediastinal abscess is most common at the age of thirty years and four months.

In the female:

5	cases of	*acute*	abscess	in the	anterior mediastinum.
4	"	*chronic*	"	"	" "
1	"	"	"	"	posterior mediastinum.

The ages of these cases are so various that scarcely any inference can be made as to the most common age for mediastinal abscess in this sex, but the average age of these few instances is twenty-five years and ten months.

An interesting question which comes up for attention is as to whether chronic and acute mediastinal abscess both occur at the same period of life; and it will be seen on glancing over the tables that there is scarcely any difference at all between the two, the average for chronic abscess being 30 years and one month, while that for acute abscess is 28 years and two months.

To briefly sum up the results of this study, we find abscess of the mediastinum affects males more frequently than females in the proportion of fifty-eight to seven, and that the anterior mediastinum is the most common seat for its development, in the proportion of forty-eight to nineteen instances of the disease in all the remaining spaces combined. The age of greatest frequency is from 20 to 30 years, with an average age of about 25 years.

The proportion of acute to chronic abscess is 48 to 31.

While the symptomatology of mediastinal abscess has many points of difference from that of other diseases of the space, many of them are alike, particularly those connected with the results of pressure on blood vessels or respiratory tubes. Nevertheless, the diagnosis of abscess from morbid growth in this

region ought to be made with comparative ease, particularly if it be acute rather than chronic.

The most constant and severe symptom is, in nearly all cases, the deep-seated pain which increases in severity from first to last, seldom remitting until suppuration has taken place and the pus has found some outlet. If the case be one of cold abscess, these painful symptoms may be masked by other more pressing ones, such as dyspnœa and œdema from pressure; although it should not be forgotten that such symptoms may appear with equal severity in both varieties of the disease. In the acute variety all the symptoms of ordinary inflammation appear, such as rigors and periodical or constant fever; the pain may be preceded or replaced by sensations of internal heat or cold, while "flushes of heat" and profuse sweats may in either variety assert themselves. In some cases the pain becomes more annoying than usual by becoming pulsating in character, the cause of which is probably identical with the sensation of the same character in a swollen finger or leg, plus the impulse of the cardiac muscle or the blood stream in the larger vessels. This sensation of pulsation is not always by any means confined to the imagination and the heightened sensibilities of the patient, since, if the abscess be so situated, or large enough, to appear externally, very marked movement can be felt by the physician.

It is important to bear in mind the fact that abscess may be mistaken for aneurism and aneurism for abscess in this portion of the body as frequently as anywhere else, and the frequent fatal mistakes made by eminent surgeons should warn the physician or surgeon that any radical measures for relief should only be undertaken after the greatest care and thought.

It is needless to state that the pain is in most cases centred in the region involved, although it frequently radiates through the entire chest, and may in some cases appear to centre itself elsewhere than in its true seat. Sometimes it dwells chiefly between the shoulders or under the sternum, while on other occasions, when the disease is situated posteriorly and presses on the nerves at their exit from the spine, great pain may

be felt at their peripheral endings on the anterior surface of the chest. This last possibility should always be borne in mind, since the complaints of the patient of pain about the sternum may mislead the physician into the belief that the anterior mediastinum is involved, when in reality the posterior area is diseased, so that in such cases the attendant should always look for symptoms of disease of the spine or bronchial glands before deciding where the lesion is situated.

In the case of acute abscess, the pain, heat, rigor and fever may be, and generally are, the only symptoms for the first few days, but as the inflammation goes on to the stage of effusion of lymph or suppuration, the various organs and nerves become pressed upon, and syncope, dyspnœa, and inability to lie down without the sense of suffocation add to the patient's sufferings.

A short, dry cough, due to irritation of the nerve filaments and mucous membranes, with wheezing respiration, owing to a decrease by pressure of the calibre of one or more air tubes, may make the case very clearly mediastinal in origin, although other swellings may of course produce this wheezing also.

Dysphagia is not so common a symptom during the existence of abscess in this space as it is in the more malignant growths, such as cancer and sarcoma, probably because the abscess sac is fluctuating and permits of more displacement than do either of these morbid processes. The fact that the pressure is not great enough to cause dysphagia, owing to the yielding nature of the sac, permits the patient to escape from the more severe and protracted pressure symptoms, the pus being fluid or caseous, fitting itself to the organs rather than displacing them.

If the vagi are affected by the suppurative process, a long train of symptoms of varying intensity come on; such as functional disturbances of digestion, with nausea, irregular cardiac rhythm, now slow, now fast, the heart muscle being one moment inhibited by the irritation of the nerves and the next quickened because there is failure of the proper quantity of inhibitory influence. Cough also arises from this same cause. If the abscess be in the middle mediastinum, or the posterior

space, pressure symptoms are naturally more constant than when the anterior area is the seat of the process.

The *physical signs*, as has already been mentioned, closely resemble in some particulars those of other affections of the mediastinum; the signs chiefly characteristic of abscess are, however, those recognized by palpation rather than auscultation, fluctuation at the borders of the sternum or at the suprasternal notch being frequently noted. The difference between a pulsating tumor or abscess in this latter region and aneurism, is to be made out by the absence of expansile movement in abscess, as well as the bruit. Percussion may elicit dullness, but Daudé* asserts that after the abscess is well formed, dullness, anteriorly, will partially disappear as the man assumes the dorsal position.

The *prognosis* of mediastinal abscess is always very grave, but by no means is it as frequently fatal as in cancer and sarcoma, or indeed any true morbid growth. If the pus manages to make its exit through the chest wall recovery is possible, and indeed likely, or if the quantity be small, it may become absorbed by a fatty metamorphosis. If the pus burst into the general tissue of the space, rather than outside the chest, death must invariably ensue. The prognosis also depends so largely on the condition of the patient's vitality, the area involved, and the character of the symptoms, that it is almost impossible to reach any ground on which to rest absolute rules for favorable or unfavorable prognostication. If the anterior mediastinum be the part affected, the prognosis is far better than when the disease appears elsewhere, since the purulent matter may escape by an action of its own, or the knife of the surgeon may relieve it.

The *duration* of the acute and chronic form is of course different, the acute running a much shorter course than the chronic; but in some instances abscesses acute in origin may become cold, and this renders any limit of time for the course of each impossible to decide. Death may come on almost as

* Les Affections du Mediastin. Paris, 1872.

rapidly as the acute abscess has formed, or recovery may take place almost as soon by the escape of the pus. It may be said that the acute variety runs its course generally in from three or four days to two or three months, or in rare instances even longer. The cold mediastinal abscess may, on the other hand, last for years, and the patient die of some other disorder.

The complications depend somewhat on the vitality of the patient. In some cases the pus burrows down through the anterior triangular space into the abdomen; occasionally it partially detaches the pleura from the costal cartilages, and thus reaches the external surface of the body, forming a round, soft and fluctuating tumor. In other instances, inflammation of the sternal periosteum on its inner surface occurs, and caries of the bone takes place, so that in certain cases the entire sternum breaks down. Harvey showed such a case to Charles the Second, and Galen recorded a similar instance.

A complication, which may in many instances cause sudden death, is the rupture of a pus sac into the trachea, a bronchus or the pleural cavity, thereby producing death from plugging of the air tubes or pressure on the lung. Where the rupture takes place into the œsophagus the pus may be vomited up, as in the case reported by Waxham. (See No. 81.)

In regard to the *treatment* of both varieties of mediastinal abscess: the same rules apply to the opening of a cold abscess here as elsewhere, except that, if the presence of abscess is certain and the symptoms are alarming, *e. g.*, sudden dyspnœa or syncope due to pressure, we should endeavor to remove the purulent collection as quickly as possible. Mediastinitis severe enough to be followed by the formation of pus should be treated by the application of leeches and counter-irritation, with the free administration of diuretics and cardiac sedatives if the case be sthenic. If the pulse be very weak, small and quick, and lacking in resistance to the finger, we must endeavor by all means in our power to build up and support the system by tonics, good food and stimulants, or if the abscess points exter-

nally it should be freely opened and free drainage provided for, care being taken that the wound is made in such a manner as to exclude air. If the pus is in large quantity and well diffused through the space, only a portion should be drawn off at once, lest the sudden removal of the intrathoracic pressure cause syncope, or if the abscess does not appear at either side of the breast bone, but seems to be involving its substance, most authors insist very strongly upon the use of the trephine, and there are upon record a sufficient number of cases, in which recovery took place after such an operation, to justify its use.

Petit, Colon and Lamartinière consider it the only resource, and one which will occasionally give relief. Lassers, in his work on Surgical Pathology, reports a case in which recovery after this operation took place in the person of a physician. Dionis, on the other hand, reports a death after it. Petit records recoveries, as does also Agnew.

HEYFELDER'S COLLECTION OF CASES OF RESECTION OF THE STERNUM.

No.	Date.	Sex.	Age.	Lesion.	Operation.	Result.	Remarks.	Reference.	Surgeon.
1	...	M.	Young.	Caries.	...	Perfect.	...	C. 13, op. lib. VII.	Galien.
2	1754	M.	40	Caries and abscess of med.	...	Good.	...	Velpeau.	Lécat.
3	1789	...	...	...	...	Good.	Regeneration of bone.	Reid. Die Resec. der Knochen.	Siebold.
4	...	M.	26	Compound fracture.	...	Good.	Trepanned.	Lisfranc. Méd. oper.	Mesnier.
5	...	...	...	Caries.	...	Good.	Trepanned.	Velpeau.	Auram.
6	...	F.	22	Caries and abscess.	...	Good.	Cured in 2 months.	Velpeau.	Sediller.
7	...	...	...	Caries.	Sternum and 2d cost. cart.	...	...	Velpeau.	Moreau.
8	1812	F.	...	Caries.	Sternum and 3d cost. cart.	Good.	...	Rust. Handwört der Chir.	Cittadini.
9	...	...	...	Caries.	Sternum and 3d cost. cart.	Good.	...	Velpeau.	Ferrand.

HEYFELDER'S COLLECTION OF CASES OF RESECTION OF THE STERNUM.
(*Continued.*)

No.	Date.	Sex.	Age.	Lesion.	Operation.	Result.	Remarks.	Reference.	Surgeon.
10	...	...	...	Caries.	...	Good.	...	Dict. de Sci. med., vol. LII.	Guenonville.
11	...	...	...	Compound fracture.	Half of the sternum.	...	...	Lisfranc.	Larrey.
12	...	...	...	Caries.	One-third of sternum.	...	...	Madad. Chirurg.	Boyer.
13	1837	...	...	Caries.	Sternum and 2d cartilage.	...	...	Jaeger. Oper. Resec.	Dietz.
14	1839	M.	32	Caries.	Sternum and 1st cartilage.	Death.	...	Reid. Die Resec. der Knochen.	Jaeger.
15	1840	M.	...	Caries.	Sternum and 2d cartilage.	Good.	...	Lisfranc.	Blandin.
16	1852	M.	40	Caries.	5 c.m. of sternum.	Perfect.	...	Resec. and amputation.	Heyfelder.
17	1856	F.	14	Caries.	...	Bad.	...	Deutsches Klinic, 1858.	Bruns.
18	1851	M.	52	Caries.	Sternum and 2d cartilage.	Perfect.	Regeneration of the bone.	Deutsches Klinic, 1858.	Küchler.
19	1858	M.	22	...	Xiphoid cart.	Good.	...	Gaz. hôp., 1852.*	Linoli.
20	1859	...	...	Necrosis.	...	...	Superficial resection.	Méd. oper.	Velpeau.
21	...	...	...	Caries.	...	...	...	Reid. Die Resec. der Knochen.	Rothmund.
22	1855	M.	13	Caries.	...	Perfect.	...	Traité des Resection.	Heyfelder.
23	...	...	...	Exostosis.	...	Perfect.	...	Méd. oper.	Velpeau.
24	1857	M.	36	Necrosis.	...	Death.	Abscess of med. for 3 mos.	*Med. Times*, Feb., 1817.	Fergusson.
25	1857	...	...	Necrosis.	...	Good.	...	*Med. Times*, Feb., 1817.	Chir. Anglais.

* This is given in Heyfelder as 1852, it must mean 1862.

When the disease has progressed far enough to produce general caries of the sternum, this bone may be, and has been, entirely or partially excised. Thus, Heyfelder, in his work, Traité de Resections, records twenty-five cases of resection, of which fifteen recovered, two died and seven are not reported as to their results.

Abscess of the posterior mediastinum, and, also the middle space, are exceedingly difficult to treat, and are much more apt to be followed by serious complications than if in the anterior space. The fact that they have no ready means of

escape to the external surface of the body causes them to burrow into the more vital tissues and create untold havoc, while their very position excludes any attempt at operative interference.

As yet attention has only been paid to that form of inflammation which is followed by the formation of pus, and though the variety which fails to go on to suppuration is of comparatively rare occurrence, a sufficient number of cases are on record to show that the disease sometimes occurs.

Notwithstanding the fact that *simple* MEDIASTINITIS is, of all other intra-thoracic inflammations, the most difficult of diagnosis, its existence seems to have been recognized very early in the history of medicine, an Arabian physician, Avenzoar, being the first to describe it, and indeed, according to Friend, he himself suffered from it. Following Avenzoar came Salius Diversus,* who recorded several cases of the lesion, and who also wrote quite particularly concerning it. Among others of the older writers are Morgagni, Trombell, Sauvages, Küstens, Flajani and Hildenbrand, all of whom have contributed to the literature of this interesting ailment.

The *exciting causes* of this trouble are very much the same as those of the suppurative form, such as traumatism in all its varieties, sudden suppression of discharges of long continuance, or in some instances suppression of the menstrual flow. In many cases non-suppurative mediastinitis is brought on by inflammation of some of the tissues surrounding the mediastinal space, as, for example, pericarditis or pleuritis, the first of which, combining with inflammation of the mediastinal tissues, brings on what is known as mediastino-pericarditis, records of several such cases being given in the preceding table. The symptoms are almost identical with the early stages of the suppurative form, and the treatment for the first stages of both disorders is also identical.

As a general rule, it may be stated that the non-suppurative variety occurs in conditions of dynamia, rather than adynamia,

* De Febri Pest. et Curat. part. Morb., c. VI, p. 247.

and is, for this reason, particularly apt to throw off a fibrinous exudate.

Age and sex govern the disease somewhat, as in none of the cases here recorded did the age exceed thirty-six years or go below nine years. The average age for the disease in man may be stated as about twenty years, or thereabout, and in the female it is about the same. Occupation does not seem to play a very important part in its production, other than that all occupations causing pressure or blows on the chest predispose to it.

Non-suppurative mediastinitis may end in one of two ways—either by resolution or by fibrous thickening of the connective tissue of the space. The first is the more common method of the two.

The *treatment* of mediastinitis closely resembles that of any inflammatory condition elsewhere in the body, and consists in the use of cardiac sedatives and counter-irritation to the chest of a more or less severe type, according to the exigencies of the case.

TABLES

GIVING THE HISTORY OF TWENTY-ONE (21) CASES OF LYMPHOMA AND LYMPHADENOMA OF THE MEDIASTINUM.

LYMPHOMA AND LYMPHADENOMA.

No.	Age.	Sex.	Cause	Area Involved.	Other Parts Affected.	Chief Symptoms.	Duration.	Result.	By Whom and Where Reported.	Variety.	Primary Seat.	Occupation.	Remarks.
1	17	F.	Caught cold from wet feet.	Anterior mediastinum; reached from thymus to diaphragm, and laterally to each lung.	Attached to pericardium; lungs involved; glands at root of neck enlarged; glands all over body enlarged.	Dyspnœa; urine laden with lithates, but otherwise normal; temperature ranged from 96 to 104.2° F.	13 mos.	Death.	Bennett. Intrathoracic Growths. London, 1872, p. 148.	Lymphadenoma.	...	Servant.	...
2	Not stated.	M.	..	Upper part of anterior mediastinum.	Surrounded all the blood vessels and nerves of neck.	Great dyspnœa.	9 mos.	Death.	Bennett. Intrathoracic Growths. London, 1872.	Lymphoma.	...	Not stated.	Occurred in Bryant's practice; death followed operation.
3	69	F.	...	"Mediastinum."	Affected lung by pressing on right bronchus.	Emaciation, cough and dyspnœa.	Not stated.	Death.	Trans. Path. Soc. Lond., xxxi, p. 279.	Lymphoma.	...	...	...
4	20	M.	...	Anterior mediastinum.	Vagi included in tumor; lymphatics of chest all enlarged.	Pain; nausea; phlebitis of left leg and dyspnœa.	11 mos.	Death.	Eve. Trans. Path. Soc. Lond., xxxi, p. 279.	Lymphadenoma.	...	...	This was also called lymphosarcoma, in brackets.

No.	Age.	Sex.	Cause.	Area Involved.	Other Parts Affected.	Chief Symptoms.	Duration.	Result.	By Whom and Where Reported.	Variety.	Primary Seat.	Occupation.	Remarks.
5	24	M.	...	Anterior mediastinum was completely filled; invaded posterior mediastinum.	Axillary and subclavian glands; osseous tissues in anterior and posterior mediastinum; involved vagi, thereby causing death.	...	...	Death.	Little. *Phila. Med. Times*, Nov. 18, 1882, p. 131.	"Lymphomatous."	...	...	...
6	21	F.	...	Anterior mediastinum.	Encroached on lungs and pressed heart back on left vagus.	Dyspnœa and lividity of face.	15 mos.	Death.	Murchison. Trans. Path. Soc. Lond., XXII, p. 68.	Lymphadenoma.	...	Servant.	...
7	42	M.	...	Posterior mediastinum.	Aorta displaced; left bronchus completely surrounded.	Dyspnœa; muco-purulent expectoration; nausea and cyanosis.	4 or 5 years.	Death.	Greenhow. *Med. Times and Gaz.*, Nov. 21st, 1874; also *Rev. des Sci. Méd.*, vol. v, p. 531.	Lymphadenoma.	...	...	...
8	22	F.	...	Anterior mediastinum.	Involved trachea, œsophagus, aorta and superior vena cava; adherent to sternum.	Chills; swelling of superficial veins on chest and neck.	2 mos.	Death.	Pasturaud. *Prog Méd.*, pp. 184 et 201, vol. II; also *Rev. des Sci. Méd.*, vol. IV, p. 496.	Lymphadenoma.	...	...	...
9	29	M.	...	Posterior mediastinum.	Displaced heart to the right and invaded left lung.	...	...	Death.	Powell. *Brit. Med. Jour.*, Jan. 25, 1873, p. 102.	"Lymphomatous growth."	...	...	...
10	37	M.	...	Tumor in front of ascending cava and pulmonary artery.	Right auricle almost filled by a mass of the tumor.	Dyspnœa; blue face; no œdema.	3 years.	Death.	Clapton. *Lancet*, London, Dec. 12, 1874, p. 835.	...	Anterior mediastinum.	Servant.	...

11	48	M.	...	Anterior mediastinum.	Embraced bronchial plexus, superior vena cava, right innominate and par vagum.	Pain; œdema of neck, right arm and face; veins of chest swollen; right radial pulse smaller than left.	5½ mos.	Death.	Ayres. *Ill. Jour. Anat. and Surg.*, Brooklyn, 1881, III, 97.	Lymphoma.	Anterior mediastinum.	Gentleman.	...
12	27	M.	...	Anterior and middle mediastinum.	Lungs.	Great dyspnœa; œdema of extremities.	Seen for 3 weeks.	Death.	Guglielmetti. *Jour. de Sci. Méd. de Lille*, 1881, III, p. 540.	Lymphadenoma.	...	...	...
13	24	M.	...	Anterior and posterior mediastinum.	Caused death by pressure on vagus.	...	...	Death.	Smith. *Phila. Med. Times*, 1882-83, XIII, p. 131; *Med. News*, 1882, XLI, p. 554.	Lymphomatous.	...	...	...
14	5	M.	...	Entire mediastinum.	Double pleurisy; trachea and bronchi involved.	Dyspnœa and cyanosis.	4 mos.	Death.	Rosenberg. Beiträge zur Casuistik der Mediastinaltumoren bei kindern.	Malignant lymphadenoma.	...	...	Probably sarcoma.
15	12	M.	...	Side of chest and posterior mediastinum.	Heart pushed to the right; surrounded the vagus; left side of chest nearly full of liquid.	Pain in lower part of chest; cough, with traces of blood in sputa.	About 8 mos.	Death.	Church. St. Bartholomew's Hosp. Reports, XIV, 1878.	Lymphoma.	...	...	...
16	19	M.	...	Anterior mediastinum.	Adenoma of sternum, 1½ inches outside and inside; venous and arterial trunks involved.	Pain; anæmia; emaciation; sense of chest constriction.	5½ mos.	Death.	Hutchinson. Trans. Coll. of Phys. of Phila., 1875, vol. I.	Multiple adenoma.	...	...	...
17	Adult.	M.	...	Anterior mediastinum.	Enlarged cervical glands; glands enlarged over whole body.	Great emaciation; abdomen tumefied; cough; œdema of feet.	4 mos.	Death.	Sarazin. *Rec. de Mém. de Méd. Milit.* Paris, 1879, 3 S., XXXV, p. 520.	Multiple lymphadenoma.	...	...	...
18	36	M.	...	...	...	...	...	Death.	Posadski. *Ejened. klin. Gaz.*, St. Petersb., 1884, IV, 41.	Lymphoma.	...	...	...

No.	Age.	Sex.	Cause.	Area Involved.	Other Parts Affected.	Chief Symptoms.	Duration.	Result.	By Whom and Where Reported.	Variety.	Primary Seat.	Occupation.	Remarks.
19	Adult.	M.	...	Posterior mediastinum.	Compressed superior vena cava.	Intense dyspnœa; asphyxia; œdema of face and lower part of legs and arms.	...	Death.	Marroin *Marseilles Méd.*, 1880, XVII, p. 526.	Lymphadenoma.	...	Journalist.	...
20	6	M.	...	Anterior mediastinum.	Tissues to left of sternum infiltrated by a yellowish mass.	Rapid breathing; dyspnœa; glands of neck enlarged; pain in chest.	5 mos.	Death.	Clay. *Jour. Anat. and Phys.*, 1879, p. 498.	Lymphoid.	Thymus gland.	...	...
21	26	M.	...	Anterior mediastinum.	Pleuræ studded with nodules; lungs also showed small growth.	Produced pleurisy and death.	...	Death.	Tay. Trans. Path. Soc. Lond., XXIII, p. 201.	Lymphadenoma.	...	...	...

LYMPHOMA AND LYMPHADENOMA.

The *lymphomatous* and *lymphadenomatous* tumors of the body are linked so closely to other morbid conditions which are generally regarded as somewhat different in their characteristics that confusion arises to-day, and has arisen in the past, as to the true lymphoma or lymphadenoma. According to one or two well known authors, these two growths are identical with multiple sarcomata, while a much larger body of pathologists regard them as somewhat different, being in some instances quite as malignant as sarcoma, while in other instances they seem to possess no malignancy whatever.

Again, the question has been raised: What is the difference between those two growths and what is known as Hodgkin's disease? The synonyms for Hodgkin's disease are generally recognized to be as follows, yet no one will deny that the profession certainly makes a distinction between Hodgkin's disease and lympho-sarcoma, notwithstanding the fact that the father of modern pathology uses the term in this manner. The synonyms are, for Hodgkin's disease, pseudo-leukæmia, general lymphadenoma, malignant lymphoma (Billroth), lympho-sarcoma (Virchow), adénie (Trousseau), dermoid carcinoma (Wagner), anæmia lymphatica (Wilks), lymphatic cachexia (Mursick), adenoid disease (Southey).

This very collection of synonyms illustrates, perhaps in a better way than words can express, the absolute chaos which reigns as regards the knowledge of lymphatic diseases; and the very fact that they are regarded in such a different light, by almost every observer of note, proves it to be a fact that these growths are not alike, and yet differ scarcely at all. This almost paradoxical condition of affairs is nevertheless a true one, and with the few gleams of light which we possess, the writer thinks we can do no more than lay down the following rule, which is, of necessity, open to exception and elastic, viz., that, in some cases, lymphadenoma possesses a malignancy both as regards metastasis and fatality which seems almost to excel true sarcoma,

while in others its benignity is equally marked and its course most prolonged.

As regards lymphoma, we may state, on what the writer believes to be a correct basis, that as a general rule it is more frequently benign than is lymphadenoma, and is in a very large proportion of cases solitary rather than multiple, notwithstanding the fact that no less an authority than Gowers regards them as identical.

In the cases placed in the tables which just precede these words the history and report of the growths did not warrant the writer in placing them side by side with sarcoma; some of the reasons for this action were explained when the subject of sarcoma of the mediastinum was under consideration, and some of them have just been stated.

So much has already been said regarding the symptoms of intra-thoracic growths that no space will now be taken up with a repetition of those signs already detailed, but we have one or two points in which these growths differ so markedly from sarcoma and cancer that they are worthy of the most careful attention. By far the most positive line drawn by nature, separating lymphadenoma from lympho-sarcoma, is the peculiar range of temperature which is present during the first-named disease. If the reader will but glance at the following tables, he will instantly see what a typical and high range of temperature is constantly present. This condition of the bodily heat does not only separate this disease from others, and thereby aid the diagnostician, but the fact that in sarcoma or cancer the temperature is below normal, while here it is above, shows that clinically there exists a difference between benign and malignant lymphadenoma which pathology does not recognize.

In the opinion of the writer typical ranges of temperature, resembling those given here, occurring in a case where mediastinal disease is suspected, should place the physician in a position from which he might fearlessly diagnosticate the variety of growth with which he had to deal.

CHART OF DR. MURCHISON'S CASE OF LYMPHADENOMA.

Date.	9 A. M.			2 P. M.			9 P. M.		
	Temperature.	Pulse.	Respiration.	Temperature.	Pulse.	Respiration.	Temperature.	Pulse.	Respiration.
Dec. 30	.....	.....	...	102.5	140	30	104.8	152	30
" 31	100.6	140	32	102.1	135	32	103.	160	34
Jan. 1	100.4	150	32	102.8	135	28	102.8	150	38
" 2	104.	160	36	104.	128	32	102.4	140	34
" 3	101.5	160	35	101.	160	30	101.	144	36
" 4	101.6	140	36	101.	150	36	102 2	142	32
" 5	101.	124	32	101.4	136	38	101.2	130	36
" 6	100.8	155	34	100.	124	32	102.	140	32
" 7	100.2	155	34	101.	132	32	102.2	165	36
" 8	99 5	160	35	100.	116	30	100.	132	28
" 9	99.4	134	33	99.6	123	28	99.8	136	30
" 10	97 8	112	24	99.	150	30	100.	132	36
" 11	99.2	140	32	100.	135	28	100.4	146	28
" 12	97.6	125	28	98.	130	26	98.6	150	32
" 13	98.8	114	26	100.	135	28	101.	150	30
" 14	.....	150	32	101.5	140	30	100.8	145	36
" 15	102.	135	30	101.8	135	26	101.	144	36

TABLE

OF TEMPERATURE, PULSE AND RESPIRATION OF DR. CHURCH'S CASE OF THORACIC LYMPHOMA.

Date.	Temperature.	Pulse.	Respiration.	Remarks.	Date.	Temperature.	Pulse.	Respiration.	Remarks.
May.	Degrees				June.	Degrees			
31, p. m.	98.2	96	34		10, a. m.	102.8	112	40	
June 1.	...	...	...		p. m.	98.6	76	28	
2, a. m.	102.2	120	30		11, a. m.	102.4	120	52	
p. m.	98.0	78	...		p. m.	97.6	60	24	
3, a. m.	103.4	126	42		12, a. m.	101.2	108	34	
p. m.	98.6	84	36		p. m.	98 6	72	36	
4, a. m.	103.8	130	48	10 grs. Quinine at 9 a. m.	13, a. m.	103.7	112	42	
p. m.	98 6	76	30		p. m.	97.8	64	26	
5, a. m.	102.8	116	42		14, a. m.	103 3	106	36	
p. m.	98.6	66	26		p. m.	97.6	62	24	
6, a. m.	103.1	122	42		15, a. m.	103.6	112	52	10 grs. Salicylate of Soda.
p. m.	...	...	...		p. m.	97.0	54	21	
7, a. m.	102 0	...	...		16, a. m.	101.2	112	36	10 grs. Salicylate of Soda.
p. m.	99.2	66	26		p. m.	97.8	60	22	15 grs. Salicylate of Soda.
8, a. m.	102.6	120	52		17, a. m.	99.2	98	34	15 grs. Salicylate of Soda.
p. m.	...	...	...						
9, a. m.	103.5	124	42						
p. m.	98.0	61	24						

TABLE OF DR. CHURCH'S CASE.—*Continued.*

Date.	Temperature.	Pulse.	Respiration.	Remarks.
June.	Degrees			
17, p. m.	99.0	80	26	
18, a. m.	103.3	108	46	
p. m.	97.8	80	24	
19, a. m.	102 4	104	36	
p. m.	97.2	64	24	
20, a. m.	98 8	84	26	15 grs. Salicylate of Soda.
p. m.	98 8	78	28	
21, a. m.	103.2	126	46	
p. m.	99.2	90	28	
22, a. m.	103.6	116	46	
p. m.	98.6	90	30	
23, a. m.	102.6	112	38	Quin. Sulph. gr. iii every 4 hrs.
p. m.	97.3	64	22	
24, a. m.	103.2	122	44	
p. m.	98.4	86	26	
25, a. m.	103.2	114	50	Quinine stopped.
p. m.	97.2	60	24	
26, a. m.	103.9	110	46	
p. m.	97.6	70	24	
27, a. m.	103.9	118	46	
p. m.	98.6	84	30	
28, a. m.	101.6	110	36	
p. m.	97.7	72	24	
29, a. m.	103.0	112	...	
p. m.	97.8	78	28	
30, a. m.	101.6	98	36	
p. m.	...	...	...	
July.				
1, a. m.	100.2	106	34	
p. m.	98 6	96	30	
2, a. m.	102.5	112	36	
p. m.	98.6	80	30	
3, a. m.	102.2	112	42	
p. m.	99.3	84	30	
4, a. m.	102.5	116	44	
p. m.	97.6	82	26	
5, a. m.	...	...	...	
p. m.	98.6	82	24	
6, a. m.	101.6	104	44	
p. m.	98.6	84	24	
7, a. m.	102.3	104	34	
p. m.	98.6	70	28	
8, a. m.	101.	104	...	
p. m.	98.8	86	28	
9, a. m.	101.6	106	38	
p. m.	98.	84	26	
10, a. m.	102.5	120	46	
p. m.	100.0	98	36	
11, a. m.	101.8	120	56	
p. m.	98.4	82	24	
12, a. m.	101.	126	42	
p. m.	98.2	92	28	
13, a. m.	103.2	120	38	
p. m.	99.	104	28	
14, a. m.	102.2	122	36	
p. m.	99 2	94	30	
15, a. m.	102.2	124	...	
p. m.	99.8	112	34	
July.	Degrees			
16, a. m.	99.5	100	34	
p. m.	...	...	...	
17, a. m.	100.8	...	..	
p. m.	100 8	112	36	
18, a. m.	99.6	108	36	
p m.	99.6	106	34	
19, a. m.	102.6	100	...	
p. m.	100.4	104	32	
20, a. m.	101.6	104	42	
p. m.	100.	112	28	
21, a. m.	100.8	112	28	
p. m.	102.6	124	42	
22, a. m.	99.	88	28	
p. m.	101 2	108	32	
23, a. m.	99.	88	32	
p. m.	99.2	88	26	
24, a. m.	100.6	114	23	
p. m.	99.2	88	30	
25, a. m.	101.7	102	...	
p. m.	100.	94	36	
26, a. m.	99.6	110	36	
p. m.	99.1	102	...	
27, a. m.	100.8	96	34	
p. m.	98.4	80	28	
28, a. m.	1 1.2	106	34	
p. m.	98.4	94	26	
29, a. m.	1 2 2	104	40	
p. m.	99.	86	30	
30, a. m.	102.8	120	36	
p. m.	99.	90	28	
31, a. m.	102.	108	...	
p. m.	99.	96	30	
August.				
1, a. m.	102.8	136	42	
p. m.	99.1	108	32	
2, a. m.	97.6	110	32	
p. m.	101.4	120	42	
3, a. m.	100.4	96	36	
p. m.	101 4	118	36	
4, a. m.	99.4	100	30	
p. m.	100.4	102	34	
5, a. m.	101.2	104	36	
p. m.	100.2	102	32	
6, a. m.	99.	100	26	
p. m.	99.4	94	32	
7, a. m.	100.2	92	34	
p m.	99.8	104	32	
8, a. m.	100.4	104	42	
p. m.	...	...	...	
9, a. m.	100.	88	...	
p. m.	...	...	...	
10, a. m.	100.2	90	32	
11, a. m.	99.6	94	...	
12, a. m.	99.6	96	...	
13, a. m.	100.3	98	...	
14, a. m.	102.	120	38	
15, a. m.	100.6	96	36	
16, a. m.	100.6	110	40	
17, a. m.	100.8	92	36	
p. m.	98.6	86	26	

TABLE OF DR. CHURCH'S CASE.—*Continued.*

Date.	Temperature.	Pulse.	Respiration.	Date.	Temperature.	Pulse.	Respiration.
August.	Degrees.			August.	Degrees.		
18, a. m.	102.2	96	34	29, a. m.	...	...	...
p. m.	99.2	96	...	p. m.	...	...	...
19, a. m.	100.	96	38	30, a. m.	...	...	...
p. m.	98.2	98	32	p. m.	...	...	...
20.	...	...	...	31, a. m.	...	...	...
21, a. m.	98.6	104	...	September.			
p. m.	98.	92	28	1, a. m.	99.	106	28
22, a. m.	99.8	...	...	p. m.	98.8	98	36
p. m.	98.	92	24	2, a. m.	97.3	100	...
23, a. m.	99.6	100	36	p. m.	97.8	90	20
p. m.	...	...	...	3.	...	...	...
24, a. m.	99.6	100	34	4.	...	...	...
p. m.	97.8	96	30	5, a. m.	97.	100	34
25, a. m.	97.4	96	...	6, a. m.	...	92	...
p. m.	98.6	90	20	7, a. m.	98.	100	32
26, a. m.	100.2	...	...	p. m.	96.4	94	26
p. m.	...	...	...	8, a. m.	...	94	26
27, a. m.	...	...	...	9.	...	...	...
p. m.	...	...	...	10.	...	...	...
28, a. m.	99.6	104	...	11, a. m.	100.	96	...
p. m.	...	...	...	p. m.	98.	104	24

BENNETT'S CASE OF LYMPHADENOMA OF THE ANTERIOR MEDIASTINUM.

Date.	Temperature.	Pulse.	Respiration.	Date.	Temperature.	Pulse.	Respiration.
January.	Degrees			January.	Degrees		
11, p. m.	102.5	148	36	22, a. m.	98.5	...	...
12, a. m.	103.7	132	40	p. m.	101.8	136	40
p. m.	103.5	152	36	23, a. m.	97.6	136	38
13, a. m.	100.8	140	36	24, a. m.	96 8	136	30
p. m.	103.0	144	40	25, a. m.	98.4	...	...
14, a. m.	103.2	152	36	26, a. m.	97.6	128	30
p. m.	102.1	146	40	27, a. m.	97.2	128	28
15, a. m.	102.7	150	44	p. m.	96.8	130	32
p. m.	102.8	...	...	28, p. m.	99.7	124	30
16, a. m.	102.4	140	48	29, p. m.	98.1	132	24
p. m.	102.8	150	42	30, p. m.	98.4	...	...
17, a. m.	103.2	...	...	February.			
p. m.	102.0	136	38	22, p. m.	103.3	140	36
18, a. m.	101.2	132	44	23, a. m.	102.4	140	28
p. m.	103.3	160	40	p. m.	103.2	140	36
19, a. m.	101.7	...	...	24, a. m.	102.6	128	30
p. m.	102.6	144	40	p. m.	102.	128	36
20, a. m.	101.5	132	36	26, p. m.	100.7	108	32
p. m.	101 4	136	44	27, a. m.	100.7	108	32
21, a. m.	100.5	140	36	28, a. m.	100.5	116	32
p. m.	100.4	124	32				

TABLE

GIVING THE HISTORY OF SEVEN (7) CASES OF MEDIASTINAL FIBROMA.

FIBROMATA.

No.	Age.	Sex.	Cause.	Area Involved.	Other Parts Affected.	Chief Symptoms.	Duration.	Result.	By Whom and Where Reported.	Variety.	Primary Seat.	Occupation.	Remarks.
1	42	F.	Caught cold or a fall.	Anterior mediastinum.	Lumen of innominate and superior vena cava decreased; tracheal stenosis.	Face anxious and livid; Œdema of extremities.	About 4 years.	Death.	Pastau. *Virch. Archiv*, Bd., XXXIV, p. 236, 1865.	...	Mediastinum.	Housewife.	...
2	24	M.	...	Anterior and middle mediastinum not adherent to sternum but attached on each side to cartilages of 1st rib.	Tumor adherent to upper lobe of lung; sup. vena cava completely obliterated; all tissues of anterior space were imbedded except pericardium and heart.	Pain in chest and dyspnœa.	5 mos.	Death.	Fox. *London Lancet*, Oct. 26th, 1878, p. 577.	...	Mediastinum.	Schoolmaster.	...
3	52	M.	...	Anterior mediastinum.	Caries of sternum.	Pain and dyspnœa.	...	Recovery.	Wiedemann. *Schmidt's Jahrbücher*, Vol. CXIII, p. 311; also *L'Union Méd*, 119, 1860; also *Yearbook Med. and Surg.*, 1862, p. 127.	...	Mediastinum.	...	...
4	50	M.	...	Anterior mediastinum.	Lumen of aorta and vena cava decreased.	Pain in chest; emaciation; simulation of aneurism; muco-purulent expectoration.	About 4 years.	Death.	McDonald. *Lancet*, and *L'Union Méd.*; also *Jour. de Méd. et Chir. et Pharm.*, Vol. XXXVII, p. 454.	"Greasy fibroma"	Mediastinum.	...	...
5	...	...	...	Posterior mediastinum.	Vagus and plexus pulmonalis affected; destruction of lung.	...	...	Death.	Gull. Guy's Hosp. Reports, 3 Ser., V, p. 307.	...	Mediastinum.	...	...
6	...	..	...	Anterior mediastinum.	Growth sprang from sternum.	...	...	Death.	Oberstimfter. *Jahresbericht über die Verwaltung d. Medicinalwesens, etc., des Cantons Zürich*, 13, 1884.	...	Mediastinum from sternal attachment.	...	...
7	25	M.	...	Anterior mediastinum.	Pressed on trachea and made an opening the size of a button hole.	Great dyspnœa.	9 weeks	Death.	Barclay. *Lancet*, London, Feb. 21st, 1864, p. 244.	Fibro-cellular.	Mediastinum.	Laborer	...

FIBROMA.

Fibroma of the mediastinal space is, as may be seen by the number of cases collected by the writer, a very rare disease, only seven instances of this lesion being found in five hundred and thirty cases. Their causation depends on the same factors as the more malignant growths, the chief exciting causes being pressure and inflammations. Multiple fibromata do not seem to occur in this region at all, while as a general rule the single growth never reaches a very large size, although this may occur.

Their onset is very slow indeed, as compared with the malignant morbid processes, and unless they press on some vital organ they may exist for an indefinite length of time without being recognized by the patient or his physician. Even after pressure symptoms become quite marked it is often years before the growth increases sufficiently to cause death, growing so slowly that the surrounding tissues accommodate themselves to the existing conditions. These growths, while occurring in some instances in any part of the mediastinal space, generally affect the anterior mediastinum, and in the instances here recorded it will be seen that in five cases out of the seven the growth was confined to this space, while one case occurred in the posterior mediastinum and one in the anterior and middle mediastinum.

These fibromatous growths affect males more frequently than females, and are more frequently seen in adults than in children.

The complications arising from the presence of such a body are much the same as those coming on in the malignant varieties, and aside from the pressure symptoms, in connection with the circulation, respiration and innervation, we often have caries of the sternum or vertebræ arising from this same cause.

The treatment is palliative almost entirely, and although operative interference is more likely to be followed by a favorable result if the growth be in the anterior mediastinum,

than if it be malignant, the difficulty of deciding its exact location and the question of what tissues elsewhere are involved, leaves so great room for error that the surgeon should be extremely loath to undertake any radical measures.

Adhesions between these growths and the surrounding tissues are the rule rather than the exception, such vital tissues as the lungs, pleuræ or pericardium being very frequently so firmly attached to the growths that it is impossible to dissect them free.

The differential diagnosis of this disease from the other forms of tumor primary in this region is almost impossible, unless by means of the more rapid growth, or the cachexia, of the malignant tumors. It should not be forgotten that if the malignant neoplasm be primary in the mediastinum the patient frequently has no signs of cachexia, the general system oftentimes seeming to hold its own. In an ordinary case, the history of other growths elsewhere, or heredity, or other obscure points may be the only guides to aid one in an attempt at differential diagnosis.

The rarity of fibroma of the mediastinum and the comparative frequency of the malignant tumors tends, of course, to throw the possibility of fibroma, in any case, aside, but such a method of diagnosis is made more by chance than by exclusion.

TABLE

GIVING THE HISTORY OF SIX (6) CASES OF MEDIASTINAL HÆMATOMA.

HÆMATOMATA.

No.	Age.	Sex.	Cause.	Area Involved.	Other Parts Affected.	Chief Symptoms.	Duration.	Result.	By Whom and Where Reported.	Variety.	Primary Seat.	Occupation.	Remarks.
1	32	M	Carried heavy timber up stairs.	Mediastinum, which space not stated.	Pressed on trachea and heart; no rupture in blood vessel could be found.	Great dyspnœa.	8 days	Death.	J. T. Eskridge. *Phila. Med. Times*, Aug. 11th, 1883, p. 807.	Hæmatoma	Mediastinum.	Porter.	Supposed to be due to rupture of a capillary aneurism.
2	44	F.	Fall.	Anterior mediastinum.	Also hæmatoma in pleural sac; serum in pericardium; atheroma of aorta, with infiltration between adventitia and other coats.	Dyspnœa; dysphagia; redness of face.	3 days	Death.	Niemeyer. *Schmidt's Jahrbücher*, CXXV, p. 245.	"Enormous hæmatoma"	Mediastinum.	Servant girl.	...
3	Adult	M.	Rupture of bronchial artery.	Anterior mediastinum.	Pressed on heart and lungs.	Great pain in chest.	Not stated	Death.	Morgagni. De sed. et caus. morb., epist. XXVI, art 39.	Hæmatoma.	Mediastinum.	...	...
4	...	...	...	Anterior mediastinum.	...	...	...	...	Blaisé. *Mont. Méd.*, 1883, I, p. 519.	Hemorrhagic cyst.	...	...	Occurred in a case of old pulmonary tuberculosis
5	22	F.	...	Posterior mediastinum.	Pus in middle mediastinum.	Cough and dyspnœa.	...	Recovery	Le Bêle. *Bull. de la Soc. de méd. de Sarthe*, 1882, Le Mans 25.	Hemorrhagic cyst.	...	...	...
6	56	M.	A bone in œsophagus.	Posterior mediastinum.	Vertical rupture of posterior wall of the œsophagus; blood found in pleura, pericardium and posterior mediastinum.	Spitting of blood; vomiting; pain in chest.	A few hours	Death.	Colles. *Dublin Quarterly Jour. of Medical Sciences*, 1855, vol. XIX, p. 325.	Hæmatoma.	Mediastinum.	...	...

HÆMATOMA.

Hæmatoma of the mediastinum may be considered, of course, as an entirely different condition from that known as *hæmothorax*, since, as is well known, the first is the collection of blood in a limited area or closed sac, while the second term is applied to a general effusion of blood anywhere or all through the chest. The causes of hæmatoma are nearly all of them traumatic, direct violence to the chest wall, in some instances, or severe exertion, frequently being their chief exciting factor.

True hæmatoma is, of course, very rare in this space, and if its cause be not violence in some form, the rupture of some minute capillary by tubercular change or like agent, may accomplish all that the greatest injury from the exterior may be capable of doing.

Where the onset of the effusion is not sudden, true cysts are much more apt to form, their contents being derived from some intermittingly bleeding vessel, or by a passive oozing through some partially broken down blood-vessel wall.

The duration of the first of these varieties is, of course, but a few days, unless the hemorrhage be very slight, when re-absorption may occur; while in the second variety cysts may form, unknown to the patient or his attendant until after death, perhaps from other cause.

Owing to the fact that trauma plays so important a part in their production, we can readily understand that the male sex suffers more frequently than the female, at least in the acute variety; in the passive form both sexes are probably affected equally, or nearly so.

The symptoms produced are here again, as in all other instances of mediastinal trouble, chiefly those of pressure, and the writer does not believe it possible to diagnose the passive hæmatoma from a morbid growth before death. The diagnosis of acute hæmatoma is perhaps almost as difficult during life, the history of the sudden onset being all that the physician has to guide him.

Hæmatomata, even when their position and existence is thoroughly established, should not be operated upon other than by thoracentesis, and even this measure is open to the grave objec-

tion that the removal of the pressure may, in the acute variety, precipitate a fresh hemorrhage, or, in the second form, transform a passive oozing into a torrent of blood. This measure should, therefore, only be resorted to when, as already stated, the diagnosis is thoroughly established, and the patient is so near death, from the pressure symptoms, that any chances for his relief are to be taken.

The physical signs of either form of hæmatoma are identical with those already gone over in the previously considered diseases, being, of course, the more marked as the blood approaches the anterior wall of the chest. Dullness on percussion over a wide or limited area may be present, and changes in the position of the patient's body alter the area of dullness provided the liquid be not too closely encysted.

The signs of *Hæmothorax* are much the same, and its frequency is, of course, much greater, since every wound of the chest of a penetrating, or partially penetrating, character may produce it, but while dullness on percussion is in the one case limited, in the other it is often extended over a very large portion of the chest. Death comes on much more rapidly in hæmothorax, in many cases, than in hæmatoma, owing to the greater outpouring of blood and consequent interference with the heart and respiration, and the symptoms are, for this same reason, much more pressing and severe. In some instances of hæmothorax, lumbar ecchymosis may come on, produced by the slow leakage of blood between the muscular fasciculi of the diaphragm and those of the quadratus lumborum muscle, the liquid extending around to the inner margin of the erector spinæ muscles, and diffusing itself through the cellular tissue over the loins. For the existence of such an extravasation it is necessary that the blood should find its way beneath the reflected pleura, and this can only take place through the opening made by the body which has produced the injury. For this reason such extravasations are rare, and their absence is no guide in making a diagnosis.

The prognosis in the case of both conditions is, of course, exceedingly grave, and must, consequently, be most guarded;

the absence of severe pressure symptoms, and the fact that these symptoms are not increasing but rather diminishing in violence, is of an encouraging nature, but the later possibilities of the case prevent absolutely any attempt at prophecy.

The treatment of hæmothorax is very different from that of hæmatoma of the mediastinum, and consists in closing the wound, in the hope that the flow of blood may be stopped by a clot. Should the symptoms of pressure assert themselves the wound must be opened and free exit of the blood be permitted, the patient lying in a position best suited for its escape. If clots have already formed, so that the fluid will not leave the chest, then the opening must be enlarged or the coagula sucked out by the use of a large canula and an aspiration apparatus, care being taken that no hernia of the pleura or pericardium occurs.

The subject of hæmatoma and hæmothorax, particularly when chiefly affecting the mediastinum, is so intimately connected with the subject of mediastinal wounds that they will now be considered.

Wounds of the mediastinum generally are inflicted from in front, and as a consequence the anterior division of this space is the region most commonly the seat of injury. When we consider that the anterior mediastinum contains fewer vital tissues than the two remaining spaces we are able to account for the large number of recoveries which occur after apparently necessarily fatal wounds.

Thus Agnew reports a case in which so large a body as the shaft of a carriage passed through the anterior mediastinum without injury to any organ in the chest, and the writer, in the list of cases of abscess and miscellaneous affections of the mediastinum, gives several instances almost equally remarkable. The dangers of wounds of the mediastinum are those of direct injury to vital tissues and the inflammations, such as pleurisy, pericarditis or mediastinitis, which may result.

The heart, of course, is the most vital organ in this region, and although wounds of it are of the greatest gravity, they are not invariably fatal. As the title of this essay excludes

any consideration of the heart and aorta, the writer is forced to pass by the consideration of the results of wounds of the mediastinum affecting these two tissues, but the matter is so full of interest that he cannot forbear calling attention to the statistics of Dr. Fischer* who collected four-hundred and fifty-two cases of injuries to the heart and pericardium, of which no less than seventy-two recovered, while in two hundred and seventy-six death took place at periods varying from one hour to nine months. Death was immediate in one hundred and four cases. Of the seventy-two recoveries, examinations, made long after, in thirty-six of the cases, proved the diagnosis to be absolutely correct.

Of these seventy-two cases ten were punctured wounds, forty-three incised, twelve gunshot and seven lacerated; fifty of them were wounds of the heart and twenty-two wounds of the pericardium. Purple† also records forty-two cases of wounds of the heart in which death did not come on immediately. Randalls records the case of a colored boy who lived sixty-seven days with a number of shot in the heart muscle, and Ferrus a case in which the patient lived twenty-one days with the heart transfixed by a skewer. Many other cases might be cited if this essay permitted it.

Wounds of the mediastinum affecting the trunks of the great vessels are, of course, very rapidly fatal. There are, however, exceptions to this rule, for in a case reported by Heil,‡ recovery took place, the patient surviving a year and dying of another disease. At the post-mortem a cicatrix was found in the aorta. Wounds of the inferior and superior vena cava are equally fatal with those of the aorta.

The treatment is, of course, limited by the character of the injury, no treatment being of avail in cases where the large blood vessels are damaged, while ligations of such small arteries as may feed the chest walls may be resorted to in the instances of lesser injury.

* *Arch. f. klin. Chir.*, von Langenbeck, Bd. IX, f. 571, 1868.

† *New York Med. Jour.*, May 1855. ‡ Henke, *Zeitschrift*, 1847.

TABLE

GIVING THE HISTORY OF ELEVEN (11) CASES OF DERMOID CYST OF THE MEDIASTINUM.

DERMOID CYST.

No.	Age.	Sex.	Cause.	Area Involved.	Other Parts Affected.	Chief Symptoms.	Duration.	Result.	By Whom and Where Reported.	Variety.	Primary Seat.	Occupation.	Remarks.
1	60	M.	...	Anterior mediastinum.	...	Dyspnœa and œdema.	Seen for 3 weeks.	Death.	Lebert. *Vierteljahrschrift für die pract. Heilkunde*, vol. LX, p. 25.	...	Mediastinum.	...	...
2	36	F.	...	Anterior mediastinum.	...	Dyspnœa and cough.	Several weeks under treatment.	Death.	Büchner. *Deutsches Klin.*, 1853, No. 28.	...	Mediastinum.	...	...
3	20	F.	...	Anterior mediastinum.	From lung passed to mediastinum.	Not stated.	Not stated.	Death.	Cloetta. *Virch. Archiv*, 1861, Bd. XX, p. 42.	...	Lung.	...	...
4	21	F.	...	Anterior mediastinum.	Cyst by upper part of sternum.	Dyspnœa.	15 mos. under observation.	Death.	Gordon. Med. Chir. Trans., XIII, 1825, p. 1.	...	Mediastinum.	...	...
5	...	...	...	...	...	...	...	...	*Nederland Weekblatt, Von Geneesk*, 1851, p. 44.	...	Mediastinum.	...	...
6	28	M.	...	Anterior mediastinum.	...	Intense pain in chest and stomach; œdema of feet; disturbed respiration	4 mos.' illness.	Death.	Cordes. Year-book of Med. and Surg., 1860, pp. 188 and 206; *Virch. Arch.*, XVI, Heft 3, 4, p. 290.	...	Mediastinum.	Soldier.	...
7	...	...	...	Anterior mediastinum.	...	...	3 years' illness	Still living when reported	Küchmann. *Cent. f. Chir.*, May 2d, 1874.	...	Mediastinum.	...	...
8	...	...	...	...	...	...	...	...	Mohr. *Medezin Zeitung*, Berlin, 1839, S. 130.	...	Mediastinum.	...	...
9	60	M.	...	Entire mediastinum.	Cysts between the lungs, and in parenchyma as well.	Lividity of lips and emphysema; œdema of feet.	1 years' illness	Death.	Naumann. *Schmidt's Jahrb.*, CIV, p. 301.	...	Mediastinum.	...	...
10	34	M.	...	Anterior mediastinum.	...	...	...	...	Pöhn. Inaug. Dissert. Berlin.	...	Mediastinum.	...	...
11	...	...	...	...	...	...	...	Death.	Finkler. *Berliner klin. Wochen.*, April 4th, 1887.	...	...	...	Complicated with lymphoma.

DERMOID CYSTS.

Dermoid cysts of the mediastinum differ in no way from corresponding cysts elsewhere, their signs and symptoms being identical with those of other morbid processes in this region. The fact that dermoid cysts arise as embryonal developments renders it surprising that symptoms arising from their presence should come on so long after birth, for, as will be seen in the table of such cases, every case reported was over twenty years of age.

The explanation of this is not, however, far to seek, for it is evident that while the cyst is a product of fœtal life, its walls keep on developing and secreting after the child is born, and, as a consequence, the cyst must increase in size and in the signs of its presence. It would be foreign to the object of this paper to deal with the subject of dermoid cysts in general, and as such a consideration would lead us toward no particular knowledge of these growths as they occur in the mediastinum, but a few words more will be said of them.

The frequency of occurrence of mediastinal dermoid cyst is, as is seen by the cases here reported, much less than their occurrence elsewhere, for it will be remembered that the mediastinum occupies a fourth position as regards the favorite place for this growth, the ovary being first, the testicle second, and the rectum the third.

When we consider that in so large a number of cases of disease of the mediastinum, we only find ten cases of dermoid cyst, we must come to the conclusion that the growth is very rare, and consequently any new cases observed should be at once reported, in order that our knowledge of the matter may increase.

The same rules apply to the diagnosis of dermoid cyst in this space as have been given for the other mediastinal lesions, and it may be laid down as a positive conclusion that there exists no pathognomonic sign or symptom which might aid in forming a differential diagnosis, unless some fistulous opening brings to view certain substances which we all know occupy such cysts. The treatment of dermoid cyst of this character

is perhaps the most favorable in its results of all the measures adopted for the cure of mediastinal lesions, simply because, occurring as they do in a closed sac, their contents can be withdrawn without any danger of the entrance of air into the chest cavity. Of course the writer speaks of the anterior mediastinum at this juncture, the same objections being in existence against operative interference in the middle and posterior spaces as have already been urged.

From what has just been said, however, it becomes evident that the treatment is, of necessity, more palliative than curative, the general history of such cases being that, after an opening for drainage is made, the cyst continues to discharge fresh material for a long space of time.

No particularly dangerous sequelæ seem to arise in such cases, however, and as a general rule the discharge gradually becomes less and less until it stops altogether, this condition of affairs being hastened in some cases by injections of iodine solutions or other like liquids. An operative procedure for the total extirpation of the cyst is certainly to be condemned, as it would, for obvious reasons, be impossible without causing great disturbances of the thoracic contents.

TABLE

GIVING HISTORY OF EIGHT (8) CASES OF HYDATID CYST OF THE MEDIASTINUM.

ECHINOCOCCI.—Hydatid Cyst.

No.	Age.	Sex.	Cause.	Area Involved.	Other Parts Affected.	Chief Symptoms.	Duration.	Result.	By Whom and Where Reported.	Variety.	Primary Seat.	Occupation.	Remarks.
1	18	M.	...	Mediastinum.	Involved intestinal tract and lung.	Cough; remittent fever; quick respiration.	...	Death.	Gueterbock. *Deutsches Zeitschrift f. Klin. Med.*, Vol. XX, p. 82.	Echinococcus.	(?)	Musician	...
2	Middle aged.	M.	...	Mediastinum.	Pleura, lung and liver; abscess in lung: empyema and emphysema.	...	...	Death.	Gueterbock. *Deutsches Zeitschrift f. Klin. Med.*, Vol. XX, p. 82.	Echinococcus.(?)	...	...	...
3	...	...	...	Mentions four cases but gives no particulars.					Thomas. On Hydatid Cysts, p. 125.	Hydatid cysts.	...	...	...
6	...	...	...	Mediastinum.	...	...	...	...	Habershon. Guy's Hosp. Reports, Ser. 3, Vol. XVIII, p. 373.	Hydatid cyst.	...	...	...
7	24	M.	...	Entire mediastinum.	A large cyst of liver pressed on lung.	Dyspnœa; pain and suffocation.	...	Death.	Dict. de Méd., tom. IV, p. 219	Hydatid cyst.	Liver. (?)	...	...
8	26	F.	...	...	Affected pleura and pericardium in opinion of reporter. There was no post-mortem.	Pain in chest; dyspnœa; oppression.	...	Death.	Bird. *Australian Med. Journal*, 1881, N. S. III, p. 170.	Hydatid cyst.	...	Housewife.	...

HYDATID CYSTS.

Hydatid Cysts occurring in the human body are, fortunately, very rare, both in England and the United States, and as a consequence, such cysts occupying the mediastinum are scarcely ever seen in either one of these countries. Even where hydatid cysts occur most frequently, as in Australia, mediastinal hydatids are not commonly met with, and the following table, taken from Thomas's well-known work on "Hydatid Disease," shows very clearly the relative frequency of occurrence of this disease in the various parts of the chest :—

Lungs,	220	cases.
Pleura,	19	"
Mediastinum,	4	"
Heart and organs of circulation,	35	"
Pericardium,	2	"
"Thorax,"	1	"
	281	"

The causes which bring about human hydatid disease are so well known, and apply so generally to the disease wherever it may be situated, that it is unnecessary to give them here, the sources of injury to the body being most commonly diseased meats, or water loaded with echinococci, while Bird insists very strongly upon the inhalation of dust in the streets, over which animals pass, as being another common mode of entrance. It immediately becomes evident that echinococci entering the body by the œsophagus must necessarily reach the liver and other organs of the abdomen with greater ease than those which enter the body by the trachea, while these in turn find the lungs and surrounding tissues a more convenient field for settling permanently.

If the theory of Dr. Bird is true, it would seem remarkable that more cases of mediastinal hydatid disease do not occur, since this space would seem to be conveniently near, and well qualified, by its contents and surroundings, for the echinococci. The fact that the lungs are very frequently attacked seems to point to the truth of his opinion, while it is nevertheless true that the abdominal organs are infinitely more frequently

affected than are those of the thorax, as Thomas, in a collection of 1897 cases of hydatid disease, found that of this number, 1363 occurred in the organs of the abdomen, and only 281 in the organs of the chest. The influence of age on the development of the disease is, of course, *nil*, for whenever the ripe eggs are swallowed, infection will be sure to follow.

Of course the younger the child is the less liable is it to infection, for it is hard to imagine how a sucking child could be attacked unless by inhalation. Old age certainly gives no protection, for several writers have recorded cases in men over eighty years of age.

As Dr. Thomas very properly points out, the longer one lives the more likely is he to be infected, because the exposure to the danger is just so much prolonged, and this is supported by Thomas's statistics, for 80 per cent. of the deaths from this cause in the Australian colonies occurred in persons between twenty and fifty years of age. The same author also makes an interesting statement, and one for which, while it contradicts one of his previous statements, he adduces no reason, viz.: that after the age of fifty years the frequency of hydatid disease constantly diminishes. Since Thomas gives no reason for this, one is forced to believe that though his first statement does not agree with his second, there is still in reality no contradiction, since, while old age in itself may not be in any way a preventive, the necessarily limited chances of exposure in one upon the downhill of life, who is forced to remain more quietly at home than the younger man, prevent indirectly any infection.

The treatment of hydatid cyst of the mediastinum consists in evacuation, when the cyst is in the anterior mediastinum and can readily be attacked. If the evidences of hydatid cyst are most positive and pressing, then operative interference may extend itself even into the other spaces, but the same difficulties are encountered here as elsewhere, and nothing more should be attempted than the evacuation of the cyst and the injection of some fluid calculated to do injury to any remaining echinococci adherent to the walls of the sac.

TABLES

GIVING THE HISTORY OF ONE HUNDRED AND FOUR (104) CASES OF VARIOUS DISEASES OF THE MEDIASTINUM.

MISCELLANEOUS DISEASES.

No.	Age.	Sex.	Cause.	Area Involved.	Other Parts Affected.	Chief Symptoms.	Duration.	Result.	By Whom and Where Reported.	Variety.	Primary Seat.	Occupation.	Remarks.
1	Not given.	M.	Exposure to cold and wet.	Anterior mediastinum.	Compression of left jugular.	Dropsy; cough; dyspnœa.	...	Death.	Anderson, for Graves. *Glasgow Med. Jour.*, Jan., 1876, p. 4.	Not known.	Not known.	Bricklayer.	No post-mortem.
2	22½	...	...	Anterior mediastinum.	Lungs and ribs; left lung œdematous.	Pain in left side.	2½ mos.	Death.	Virchow. *Virch. Archiv*, LIII, p. 441.	Teratoma myomatoides.	...	Soldier.	...
3	37	M.	Syphilis. (?)	Anterior mediastinum.	Obliteration of superior vena cava and fibroid disease of heart.	Lividity and swelling of face and abdomen.	7 years.	Death.	Habershon. Trans. Path. Soc. Lond., XXII, p. 79.	Fibroid thickening of tissues.	...	Coal-heaver.	...
4	Adult	M.	Sword wound.	Anterior mediastinum.	Puncture of chest wall.	Free respiration, but hemorrhage from chest wall.	1 mo.	Recovery.	Dionis Cours d'operations de durang, 4th edit., p. 428.	Wound of.	...	Soldier.	Occurred in 1703.
5	37	M.	...	Anterior mediastinum.	Invaded left lung along bronchus; also in supra-renal capsules; pericardium distended with fluid.	Dyspnœa.	3 mos.	Death.	Moore. Trans. Path. Soc. Lond., XXXV, p. 372.	Endothelioma	...	...	...
6	Child.		...	Mediastinum, entire.	Emphysema of lung connecting with mediastinum.	Symptoms of emphysema.	...	Death.	Baerwinkle. *Schmidt's Jahrbüch*, Vol. LXXXII, p. 63.	Emphysema.	...	...	..

7	61	M.	...	Mediastinum.	Chest sunken; thickening of right pleura and bronchus; right vagus involved in growth; hepatization of lung.	Pain in right side; no cough.	4 mos.	Death.	Gull. Guy's Hosp. Reports, 3 Ser., v, p. 307.	Fibrous infiltration.	...	...	...
8	27	F.	...	Mediastinum.	...	Dyspnœa; dusky face, which was bloated.	Not stated, end of case not seen.		Duckworth. *Brit. Med. Jour.*, Sept. 15th, 1877, p. 380.	Not known.	...	...	Thought to be malignant.
9	Not stated	M.	...	Middle mediastinum.	Bronchial glands.	...	...	Death.	*Deutsche Zeitschrift für klin. Medic.*, Vol. xx, p. 93.	Strumous glands.	...	...	...
10	Adult	M.	Shot by conoidal ball.	Mediastinum.	Sternum and anterior terminations of several ribs on left side were fractured.	...	...	Death.	Army Medical Museum, U. S. A. Surgical Section, No. 3044, h. 37.	Gunshot wound.	...	Soldier.	...
11	Adult	M.	Shot by conoidal ball.	Mediastinum.	Bullet tore away cartilage of second rib comminuted the sternum and exposed heart and aorta.	...	...	Death.	Army Medical Museum, U. S. A. Surgical Section, No. 2925, h. 39.	Gunshot wound.	...	Soldier.	...
12	Adult	M.	...	Anterior mediastinum.	Lower part of sternum pushed into anterior mediastinum.	...	...	Death.	Army Medical Museum, U. S. A. Surgical Section, No. 3760, cy. 3.	Crush.	...	...	...
13	2½	F.	...	Enlarged mediastinal glands; no tubercle.	One gland opened into trachea and caused death.	Dyspnœa and fits.	2 mos.(?)	Death.	Goodhart. *Brit. Med. Jour.*, April 12th, 1879, p. 542.	Enlarged glands.	Mediastinum.	...	...
14	8 mos.	F.	...	Glands of posterior mediastinum.	Glands red and fleshy, but caseous; enlarged thymus.	Crowing respiration.	...	Death.	Goodhart. *Brit. Med. Jour.*, April 12th, 1879, p. 542.	Enlarged glands.	Mediastinum.	...	...
15	8 mos.	M.	...	Glands of anterior mediastinum.	Thymus enlarged; pressed on sternum.	Dyspnœa.	...	Death.	Goodhart. *Brit. Med. Jour.*, April 12th, 1879, p. 542.	Enlarged glands.	...	...	...

No.	Age.	Sex.	Cause.	Area Involved.	Other Parts Affected.	Chief Symptoms.	Duration.	Result.	By Whom and Where Reported.	Variety.	Primary Seat.	Occupation.	Remarks.
16	31	M.	...	Mediastinum.	...	Cough; œdema of face; venous congestion and cyanosis.	Several years.	Still alive when reported.	Schreiber. *Deutsches Arch. f. Klin. Med.*, XXVII, p. 57.	Not known.	...	...	...
17	49	M.	...	Mediastinum.	Extended from lung to mediastinum.	Dyspnœa; cyanosis; congestion of superficial veins.	About 1 year.	Death.	Schreiber. *Deutsches Arch. f. Klin. Med.*, XXVII, p. 67.	Not stated.	Left forearm.	Coppersmith.	...
18	38	M.	...	Mediastinum.	Sanguinolent fluid in pericardium; hemorrhagic exudate in pleural cavity.	Cyanosis of face; dyspnœa and fever.	A little over 1 month.	Death.	Schreiber. *Deutsches Arch. f. Klin. Med.*, XXVII, p. 68.	Lipoma.	...	...	...
19	64	M.	...	Mediastinal glands.	Glands swollen at bifurcation of trachea.	Anæmia.	...	Death.	Goodhart. *Brit. Med. Jour.*, April 12th, 1879, p. 543.	Enlarged glands.	...	...	...
20	38	M.	...	Anterior mediastinum.	Occluded superior vena cava partially; root of right lung involved.	Dyspnœa; cachexia and cyanosis.	6 mos.	Death.	Brikett. *Med Times and Gaz.*, Oct. 31st, 1874, p. 495.	Malignant growth.	Mediastinum.	Carman	...
21	60	F.	...	Anterior mediastinum.	Area of thymus gland was occupied by tumor, which was attached to sternum and costal cartilages.	Pain and dyspnœa; cyanosis; dropsy and dysphagia.	19 mos.	Death.	Wilson. Trans. Path. Soc. Phila., XII, p. 247.	Tumor with secondary growth.	Mediastinum.	Housewife.	...
22	Adult	F.	Stabbed with a knife.	Anterior mediastinum.	Lung stabbed also.	Dyspnœa and pain; redness about wound; expectoration of fetid black blood.	1 year.	Recovery.	Nélaton. Elements de Path. Chirurg., tom. I, p. 456.	Stab.	Mediastinum.	...	Necrosis of rib.

23	Adult	M.	...	Anterior mediastinum.	Fracture of sternum.	...	...	Recovery.	Mém. de l'Acad. de Chir., tom. IV, p. 550.	Fracture.	...	...	...
24	Adult	M.	Fall from a bridge.	Anterior mediastinum.	Dislocation of ensiform cartilage into mediastinum.	Very great dyspnœa and pain.	...	Recovery.	Reported to writer by Dr. H. M. Howe.	Dislocation with pressure.	...	...	...
25	Adult	M.	Bullet wound.	Anterior mediastinum.	Completely denuded sternum.	Dyspnœa; great pain in chest; tumefaction.	...	Recovery.	Petit. Œuvres Chirurg.	Wound.	...	Cavalryman.	...
26	48	M.	Caught cold.	Mediastinal connective tissue filled with fluid.	...	Pain in chest; dysphagia.	4 mos.	Death.	Haygarth. Medical Trans., tom. III, p. 37.	...	Mediastinum.	...	...
27	55	F.	...	Anterior mediastinum.	Anterior portion of pericardium; tubercles on heart.	Great dyspnœa.	...	Death.	Daudé. Les Affections du Mediastin, p. 35.	Probably tubercular tumor.	Mediastinum. (?)	Governess.	A lardaceous mass.
28	26	M.	...	Mediastinum.	...	...	...	Death.	Gogue. Mém. de la Soc. Anat., 1846, p. 234.	Scrofulous or tubereulous tumor.	Mediastinum.	...	...
29	...	M.	...	Mediastinum.	Pericardium involved.	Those of angina pectoris.	...	Death.	Fothergill's Works. London, 1783.	Lipoma.	Mediastinum.	...	...
30	50	M.	...	Anterior mediastinum.	...	Faintness and dyspnœa.	...	Death.	Jurint. Traité de l'Angine de poitrine, appendix, 4th case.	Lipoma.	Mediastinum.	...	...
31	...	M.	...	Mediastinum.	...	Suffocation.	...	Death.	Lieutand. Hist. Anat., tom. II, p. 87.	(?)	Mediastinum.	...	...
32	...	...	...	Anterior mediastinum.	Involved phrenic nerves.	...	...	Death.	Andral. *Compendium de Méd.*, article "Asthma."	Tuberculous glands.	...	...	...

No.	Age.	Sex.	Cause.	Area Involved.	Other Parts Affected.	Chief Symptoms.	Duration.	Result.	By Whom and Where Reported.	Variety.	Primary Seat.	Occupation.	Remarks.
33	4	"Infant."	...	Middle and posterior mediastinum.	Bronchial glands very large and tubereulous; involved pulmonary arteries, veins and vagi.	Constant pain in epigastrium; rapid respiration; cyanosis.	7 weeks.	Death.	Gravenhorst. *L'Union Méd.*, 1867, Feb. 5, p. 254.	Tubereulous glands.	...	...	...
34	Adult	M.	...	Entire mediastinum.	Heart had tubereular cysts; lymphatiesinfiltrated: spinal column covered with tubercle.	Abundant expectoration and frequent cough; dyspnœa and cyanosis.	...	Death.	Dubois. Bull. de l'Acad. de Méd., 1870, p. 807.	Tubereulous glands.	...	...	...
35	19	F.	...	Thymus gland inflamed and hypertrophied.	...	Dyspnœa.	...	Death.	Cooper. *Gaz. Hebdomadaire*, 1832.	Enlarged thymus.	...	...	...
36	...	M.	...	Nearly entire mediastinum.	Passed along œsophagus through the diaphragm.	...	...	Death.	Observations of Medical Society of Edinburgh, Vol. III, 453.	An atheromatous steatomatous tumor.	...	...	...
37	30	M.	Syphilis	Anterior mediastinum.	Adherent to sternum and 2d costal cartilages.	Deep pain in chest.	Several mos.	Recovery.	Küster. *Berliner Klin. Wochen.*, Vol. XX, 1883, p. 127.	Gumma.	Mediastinum.	Miller.	Tumorextirpated by knife.
38	36	F.	...	Anterior mediastinum.	Body of sternum.	...	...	Recovery.	König. *Centralbl. f. Chir.*, 1882, No. 42.	Osteoid chondroma.	Sternum.	Housewife.	Tumorextirpated by knife.
39	42	M.	...	Anterior mediastinum.	...	...	...	Death.	Gallardi. *Omodei Ann. Univ.*, Dec., 1839.	Enormous brain-like mass.	Mediastinum.	Butcher	...

40	...	...	...	"Both mediastina"	Right and left pleural sacs.	...	...	Death.	Clark. *Lond. Gaz.*, 1843, April.	Soft tumor.	...	...	...
41	30	M.	...	Anterior mediastinum.	Encircled aortic arch; extended downward to mesenteric glands.	Anæmia; swelling of right external jugular.	About 8 weeks	Death.	Markham. Trans. Path. Soc. London, IV, p. 177.	Enlarged glands.	Anterior mediastinum.	...	...
42	23	F.	...	Anterior mediastinum.	Base of heart surrounded; pleuræ, spleen and liver involved; great vessels compressed.	Great emaciation; dyspnœa; dysphagia and hydrothorax.	13 mos.	Death.	Boswell, for Williams. Trans. Path. Soc. Lond., XIII, p. 219.	Lymphatico-anæmic.	Neck. (?)	...	...
43	...	M.	...	Mediastinal glands.	Lungs; 3 upper cervical vertebræ; odontoid process and transverse ligaments involved.	...	Some years.	Death.	Ogle. Trans. Path. Soc. Lond., XV, p. 20.	Tubercle.	Spine.	...	...
44	18	M.	...	Anterior and posterior mediastinum.	Enlarged bronchial glands; spleen and liver, kidneys and glands in lumbar region are enlarged.	General dropsy; anæmia and weakness.	1 year.	Death.	Wilks. Trans. Path. Soc. Lond., Vol. X, p. 259.	Lardaceous deposit.	"Glandular system."	...	...
45	35	M.	...	Anterior mediastinum.	Right and left pleuræ, pericardium and liver involved.	Emaciation; cough; consolidation of lung; pulse feeble and intermittent.	5 mos.	Death.	Bristowe. Trans. Path. Soc. Lond., Vol. V, p. 83.	Œdema.	Left lung.	...	...
46	Lad.	M.	...	Anterior mediastinum.	Pericardium contained pus.	Great thirst; pulsating tumor of sternum.	1½ mos.	Death.	Rich and Bowen. *Liverpool Med.-Chir. Jour.*, 1882, II, p. 344.	Pulsating tumor of sternum.	...	...	...
47	29	M.	..	Posterior mediastinum.	...	...	...	Death.	Pacanowski. *Gaz. lek Warszawa*, 1882, 25, II, p. 125.	Malignant neoplasm.	...	...	...

No.	Age.	Sex.	Cause.	Area Involved.	Other Parts Affected.	Chief Symptoms.	Duration.	Result.	By Whom and Where Reported.	Variety.	Primary Seat.	Occupation.	Remarks.
48	46	M.	Gashed in chest.	Gash on left side of chest, obliquely between 3d and 4th rib.	Finger when introduced could touch heart through edge of lung.	Oppression over left chest; no hemoptysis.	9 days.	Recovery.	Macewen. *Glas. Med. Jour.*, 1875, Vol. VII, p. 1.	Wound.	...	...	...
49	Girl.		...	Glands in mediastinum.	Cavity in right lung; glands between bifurcation of trachea and superior vena cava are diseased.	Cyanosis; coma; œdema of face.	...	Death.	Baseri. *Jahrb. f. Kinderkrankheiten*, XII, p. 415, 1878.	Tuberculous glands.	...	...	...
50	50	M.	Syphilis.	Anterior mediastinum.	Aorta dilated and atheromatous.	Pain in chest; cough; albuminuria; right pupil not as large as left.	...	Death.	Bramwell. *Edin. Med. Jour.*, p. 1072, June, 1878.	Cystic tumor.	...	Soldier.	...
51	26	M.	...	Glands of mediastinum.	Suppurative pericarditis.	...	...	Death.	Kast. *Virchow's Archiv.*, Bd. 96, p. 489.	Tuberculous glands.	...	...	...
52	22	M.	...	Anterior mediastinum.	Pericardium affected.	Resulting pleurisy; pain in chest; dyspnœa.	...	Recovery.	Petersen. *Berliner Klin. Wochen.*, No. 44.	Extra-pericardial emphysema.	...	...	...
53	11	F.	...	...	Diagnosis made by physical signs.	Cyanosis; pain in chest.	3 years	Not dead when reported.	Rosenberg. *Beiträge zur Casuistik der Mediastinaltumoren bei Kindern.*	Not stated.	...	...	...
54	7	M.	Scarlet fever. (?)	Chiefly in posterior mediastinum.	Inflammation of œsophagus of purulent character; pleurisy and peritonitis.	Ascites and hydrothorax; dyspnœa and pleurisy.	...	Death.	Eberth. *Deutsches Archiv f. Klin. Med.*, Bd. XXVIII; Heft 1.	Mycotic mediastinitis.	Mediastinum.	...	...

55	26	M.	...	Mediastinum.	No post-mortem.	Livid face, covered with sweat; œdema of thorax and neck.	2½ mos.	Death.	Gairdner. *Glas. Med. Jour.*, XII, N. S., p. 146.	Not known.	...	...	Thinks it was lymphoma or cancer.
56	9	M.	Blow on chest.	Anterior mediastinum.	No post-mortem.	...	3 weeks	Still alive when reported.	Jones. *Brit. Med. Jour.*, 1880, 1, p. 286.	Cystic tumor.	Anterior mediastinum.	...	...
57	44	M.	Not given	Glands of entire mediastinum.	Lung, veins and right side of neck affected.	Pain under clavicle.	3 or 4 mos.	Death.	Trans. Path. Soc. Lond., XXXV, p. 82.	Enchondroma	...	...	...
58	...	...	...	...	...	...	...	...	Chabrely. Mém. et Bull. Soc. de Méd. et Chir. de Bordeaux, 1886.	Enchondroma	..	...	...
59	46	F.	...	Mediastinum.	...	Pain in chest; cough; lips livid; slight dysphagia.	...	Still alive at time of report.	Eger. Inaug. Dissert. Zur Path. du Mediastin, 1872, March.	Not known.	...	...	...
60	40	M.	...	Posterior mediastinum.	Thyroid gland moved in swallowing.	Extreme hyperæsthesia of right arm; venous murmur in neck.	Still living when reported.		Wood. *Phila. Med. Times*, 1880-81, XI, p. 471.	Not known.	...	...	...
61	Adult.		...	Posterior and middle mediastinum.	Pressed on trachea and œsophagus.	Dyspnœa is extreme; cyanosis of lip, tongue and hands.	...	Death.	Kronlein. *Deutsches Zeitschrift f. Chirurgie*, Vol. XX, 1884, p. 93.	Strumous retrotracheal glands.	...	...	...
62	32	M.	Fall from a high wall.	Mediastinum.	Pericardium.	Pain in head; symptoms of oppression and pericarditis.	Not clearly stated.	Recovery.	Schoetter. *Berliner Klin. Wochen.*, XXIII, 51, 1886.	Extra-pericardial emphysema.	...	Mason.	...
63	Adult	M.	Ascending a steep ladder.	Anterior mediastinum.	Tissues surrounding pericardium.	Sudden acute pain in chest; crepitant râles, with cardiac beat.	3 weeks	Recovery.	Petersen. *Berliner Klin. Wochen.*, Nov. 3d, 1881.	Extra-pericardial emphysema.	...	Wharfman.	...

No.	Age.	Sex.	Cause.	Area Involved.	Other Parts Affected.	Chief Symptoms.	Duration.	Result.	By Whom and Where Reported.	Variety.	Primary Seat.	Occupation.	Remarks.
64	Adult	M.	...	Anterior mediastinum.	Tissues around pericardium.	Sharp pain over heart; crackling sound in chest.	A few days.	Recovery.	Petersen. *Berliner klin. Wochen.*, Nov. 3d, 1884.	Extra-pericardial emphysema.	...	Professsor.	...
65	35	F.	...	Anterior mediastinum.	Atelectasis of lung; compressed descending cava; adherent to sternum.	Oppression; pain in left arm and cyanosis.	...	Death.	Burresi. *Sperimentale Firenza*, 1883, LII, p. 465.	"primary tumor."	Mediastinum.	...	...
66	18	M.	...	Anterior mediastinum.	Tubercles in lung; hypertrophy and suppuration of thymus gland.	Pain in chest; oppression and cough.	...	Death.	Wittich. *Arch. f. Path. Anat.*, tom. VIII.	Hypertrophy and suppuration of thymus.	Thymus.	...	...
67	...	...	...	Entire mediastinum.	Purulent pericardium; tuberculosis of mediastinal glands.	...	...	Death.	Kast. Amtl. Ber. und d. Versamml. deutsch Naturf. und Aerzte, Fauberg, I, Bd. 1884, LVI, 162.	Purulent pericarditis and tubercle of mediastinal glands.	...	...	...
68	...	...	...	Base of heart.	Imbedded in base of heart was a burdock burr surrounded almost entirely by fibrous matter; tissue around it was well organized.	...	...	Death.	Olin. *Chicago Med. Times*, 1879-80, XI, p. 377.	Foreign body in heart.	...	...	...
69	15	F.	...	Entire mediastinum.	Heart displaced by growth; aorta involved; also the pulmonary artery.	Pain; cough; rapid pulse.	2 mos.	Death.	Goetz. *Berlin. Klin. Wochen.*, 1885, XXII, p. 83.	Not stated, but a tumor.	...	Servant.	...

70	24	F.	...	Entire mediastinum; anterior space chiefly affected.	Pleura and lungs adherent to tumor.	Cyanosis and rapid pulse.	2½ mos.	Death.	Goetz. *Berlin. klin. Wochen.*, 1885, XXII, p. 83.	Not stated, but a tumor.	Mediastinum.	Housewife.	..
71	"Aged female."		Not known.	Anterior mediastinum.	Hernia took place through left sternum and attachment to diaphragm.	...	Not known.	Death.	Trans. Path. Soc. Dub.; *Dublin Jour. Med. Sci.*, 1878, LXVI, p. 61.	Diaphragmatic hernia.	...	...	Serous sac contained omentum and loop of great intestine.
72	27	F.	...	Apex of thorax.	Encircling vessels at apex of thorax was a thickened mass of areolar tissue and enlarged glands, which occluded the superior vena cava and azygos veins.	Dyspnœa and lividity of face.	Not stated.	Death.	Reference mislaid.	...	...	Housewife.	...
73	46	F.	Injury received 2 years before.	Anterior mediastinum.	Glands adherent to sternum, as was also the tumor: great blood vessels are involved; also glands at the bifurcation of the trachea.	Dyspnœa and general œdema; oppression; abundant expectoration; cardiac palpitation.	4 mos.	Death.	Deville. *La France Médicale*, 1887, No. 21, p. 246.	Tumor; variety not stated.	...	...	...
74	42	F.	...	Ribs and sternum.	Emphysema occurred after excision of 3d, 4th, 5th and 6th ribs and part of sternum.	...	...	Recovery.	Ziemssen. *Deutsches Arch. f. klin. Med.*, XXX, p. 270.	Enchondroma.	Ribs and sternum.	...	This is the case of Catharina Serafin.
75	22	M.	3 oz. canister ball.	Anterior mediastinum.	Sternum comminuted at level of 3d rib; tore through costal pleura; arch of aorta distinctly visible; left lung collapsed.	Dyspnœa and slight pain.	Not well years after injury.	Recovery.	Med. and Surg. Hist. War of Rebellion, Surgical Section, Injuries of Chest, U. S. A.	Wound.	...	Soldier.	...

No.	Age.	Sex.	Cause.	Area Involved.	Other Parts Affected.	Chief Symptoms.	Duration.	Result.	By Whom and Where Reported.	Variety.	Primary Seat.	Occupation.	Remarks.
76	...	M.	Conoidal ball.	Anterior mediastinum.	Fracture of sternum; ball lodged under sternum.	Hemoptysis; traumatic pneumonia.	1 day.	Death.	Med. and Surg. Hist. War of Rebellion, Surgical Section, Injuries to Chest, U. S. A.	Wound.	...	Soldier.	...
77	21	M.	Struck by a piece of shell.	Anterior mediastinum.	Sternum fractured; a large tumor formed over sternum at point of injury; small pieces of sternum driven into left lung; extensive pleuritis; abscess in left lung.	Dyspnœa and partial aphonia.	...	Death.	Med. and Surg. Hist. of War of the Rebellion, Surgical Section, Injuries to Chest, U. S. A.	Wound.	...	Soldier.	There was no break in the skin.
78	27	M.	Round ball entered sternum.	Anterior mediastinum.	Ball entered through centre of the sternum and lodged beneath posterior border of left scapula.	Hemorrhage; bloody expectoration; dyspnœa.	...	...	Med. and Surg. Hist. of War of Rebellion, U. S. A., Surgical Section, Injuries of Chest.	Wound.	...	Soldier.	...
79	23	M.	Round ball.	Anterior mediastinum.	Entered upper part of sternum and lodged beneath posterior border of left scapula.	...	...	...	Med. and Surg. Hist. of War of Rebellion, U. S. A., Surgical Section, Injuries to Chest.	Wound.	...	Soldier.	...
80	21	M.	Gunshot wound.	Anterior mediastinum.	Ball entered sternum about 1 inch below jugular fossa and perforated lobe of left lung.	Dyspnœa and pain.	...	...	Med. and Surg. Hist. War of Rebellion U. S. A., Surgical Section, Injuries of Chest.	Wound.	...	Soldier.	...
81	...	...	...	Middle mediastinum.	Peritracheal glands are tubercular.	...	...	Death.	Leblond. Thèse de Paris, 1824.	Tuberculosis.	...	...	...

82	...	...	...	Middle mediastinum.	Lung diseased; tuberculosis of peritracheal glands.	...	...	Death.	Panot. Soc. Biolog., 1886.	Tuberculosis.	...	...	...
83	19	M.	...	Mediastinum.	...	Œdema of fect; swelling of abdomen; when standing is pale; but becomes cyanotic when lying down.	Left hospital.		MacDonnell. *Canada Medical & Surgical Journal*, 1886-87, XV, p. 728.	?	...	Butcher	...
84	...	...	...	...	...	...	...	...	Aubrey, Henri. Cont. à l'etude Tumeurs malignes du Mediastin. Paris, 1881, p. 66, No. 204.	...	...	...	...
85	...	...	...	...	...	...	...	...	Van Praag, Isidor. Leiden, 1885, 61 pp., 8vo. S. van Doesburgh	...	...	...	...
86	...	...	...	...	...	...	...	...	Siebert. Thèse de Paris, 1872.	...	...	...	...
87	...	...	...	...	...	...	...	...	Bournier. Société Médicale des Hôpitaux. Paris, 1864.	...	...	...	...
88	40	M.	...	Bronchial glands; posterior and middle mediastinum.	Œsophagus greatly compressed and surrounded by firm fibrous bands.	Great emaciation; dysphagia.	Not stated.	Death.	Grimm. *Cincinnati Lancet and Clinic*, Vol. XVII, No. 1, July 3d, 1886, p. 13.	Enlarged bronchial glands.	...	...	...
89	46	M.	...	Bronchial glands; posterior and middle mediastinum.	Obliterated trachea one-half at bifurcation; posterior rings of trachea softened.	Great dyspnœa.	Not stated.	Death.	Grimm. *Cincinnati Lancet and Clinic*, Vol. XVII, No. 1, July 3d, 1886, p. 13.	Enlarged bronchial glands.	...	...	...

No.	Age.	Sex.	Cause.	Area Involved.	Other Parts Affected.	Chief Symptoms.	Duration.	Result.	By Whom and Where Reported.	Variety.	Primary Seat.	Occupation.	Remarks.
90	Not stated.		...	Whole front of chest lined with a mass of solid fibrous tissue 2 inches thick.	Covered the pericardium and extended laterally on each side of the sternum.	Those of pleurisy with effusion.	Not stated.	Death.	Thompson, E. Symes. *Medical Mirror*. London, 1865.	?	Mediastinum	...	...
91	28	M.	...	Entire mediastinum.	Tumor penetrated chest wall between 1st and 2d ribs; closely attached to dorsal vertebræ from 1st to 4th; filled upper part of left chest completely; enveloped great vessels; pushed œsophagus to one side; left lung collapsed and contained secondary nodules.	Dyspnœa; a tumor in the neck.	2½ mos.	Death.	Westcott. Trans. Path. Soc. Phila.; reported in *Boston Med. and Surg. Jour.*, Oct. 6th, 1887.	Evidently malignant.	Not stated.	Brakeman.	...
92	...	M.	Gold plate lodged in œsophagus.	Middle mediastinum.	Plate caused ulceration of wall of œsophagus, and also of trachea, making an opening from one to the other.	Violent coughing and expulsion of ingested matter.	...	...	Cohen. Diseases of the Throat, etc., p. 313, 2d ed.	Foreign body.	...	...	...
93	...	..	Fish bone in œsophagus.	Middle and posterior mediastinum.	Bone pierced heart and caused death by hemorrhage.	...	...	Death.	Andrews. *Lancet*, London, 1860.	Foreign body.	...	...	...

94	...	...	Piece of gutta-percha ulcerated into mediastinum.	Posterior mediastinum.	Opened œsophageal vessels and produced hemorrhage.	...	...	Death.	Erichsen. Erichsen's Surgery, Vol. II, p. 484.	Foreign body.	...	...	...
95	...	...	Bone perforated œsophagus.	Posterior mediastinum.	Bone perforated œsophagus and wounded a subclavian artery occupying an anomalous position.	...	...	Death.	Kerby. Agnew's Surgery, Vol. II, p. 1015; Dublin Hospital Reports, Vol. II, p. 224.	Foreign body.	...	...	...
96	...	M.	Sword wound.	Posterior mediastinum.	Passed through œsophagus and wounded pericardium.	Leaped spasmodically in the air, and fell to ground in a dead faint.	A few hours.	Death.	Agnew. Agnew's Surgery, Vol. II, p. 1015.	Wound.	...	Strolling juggler.	...
97	...	...	Bone in œsophagus.	Posterior mediastinum.	Medulla spinalis diseased, due to the entrance of bone into an intervertebral cartilage.	...	...	Death.	Ogle. Agnew's Surgery, Vol. II p. 1015.	Foreign body.	...	...	...
98	Adult	M.	A coin.	Posterior mediastinum.	Coin lodged at bifurcation of trachea; ulcerated through and produced erosion of aorta and death.	Very severe hemoptysis.	15 days.	Death.	Recueil de Mém. de Méd. Militaire, Tom. 20.	Foreign body.	...	Corporal.	Swallowed coin out of bravado; 6-franc piece.
99	Adult	M.	Bone.	Posterior mediastinum.	Perforated œsophagus opposite 4th and 5th cervical vertebræ, which were softened, black and carious.	Pain; dyspnœa; vomiting; hoarseness.	31 days.	Death.	Poulet. Foreign Bodies in Surgery, Vol. I.	Foreign body.	...	Soldier.	...
100	22 mos.	Infant.	Bone.	Posterior mediastinum.	Ulcerated into mediastinum; bodies of 2d, 3d and 4th cervical vertebræ were carious.	Neck swollen; hoarseness; fetid breath and cough.	3 mos.	Death.	*Journal Général de Méd.*, tom. XIII, 1807.	Foreign body.	...	...	...

No.	Age.	Sex.	Cause.	Area Involved.	Other Parts Affected.	Chief Symptoms.	Duration.	Result.	By Whom and Where Reported.	Variety.	Primary Seat.	Occupation.	Remarks.
101	Adult	M.	Chestnut.	Mediastinum.	Œsophagus constricted; ulcerated through and produced an abscess beneath thyroid body; communicated with trachea; abscess formed and contained chestnut.	...	19 days.	Death.	Guattani. Mém. de l'Ac. Chirurgie, tom III, p. 344.	Foreign body produced abscess.	...	...	...
102	5 or 6 years.	Child.	A little saucer.	Middle mediastinum.	Opening 5 inches deep between œsophagus and trachea; this opening communicated with trachea.	Vomiting; rapid emaciation.	Not stated; a few days.	Death.	*Edinburgh Med. Jour.*, 1848.	Foreign body.	...	...	...
103	47	M.	Pin in œsophagus.	Middle and posterior mediastinum.	Pin perforated œsophagus and passed into aorta producing fatal hemorrhage.	Sudden death after vomiting blood.	Very short.	Death.	*Lancet*, 1877, Vol. II, p. 789.	Foreign body.	...	...	...
104	Adult	M.	Teeth in œsophagus.	Middle mediastinum.	Pus in pericardium; foreign body was situated just above heart.	Malaise; anorexia; insomnia; fever; vomiting; delirium.	A few days.	Death.	Buist. *Charlestown Med. Jour.*, 1858.	Foreign body.	...	...	...

MISCELLANEOUS DISEASES OF THE MEDIASTINUM.

Under this heading the writer has placed, as he has already stated, a large number of cases which are anomalous in some instances and in too small numbers in others to deserve a separate table, while still others are given such indefinite names that it is impossible to classify them.

The subject of wounds of the mediastinum has already been considered, and the writer will therefore next consider those growths consisting of a fatty mass and generally known as Lipomata.

The occurrence of *lipoma* is, of course, exceedingly rare in this space, and when it does occur, it generally comes on in those of middle or advanced age, although it may exist as a congenital growth.

The symptoms produced by such a growth in the mediastinum are simply those of pressure, and no remedy exists except thorough enucleation, which, of course, is exceedingly difficult of accomplishment. They resemble in every way fatty tumors occurring elsewhere and possess no peculiar characteristic whatever. (See cases No. 18, 29 and 30.)

Several cases have been found by the writer (see cases No. 3 and 7) of what has been called *fibrous infiltration*, a lesion which consists in a slow thickening of the tissues of the mediastinum, which thickening may or may not produce alarming symptoms, according to whether it contracts and involves any of the more vital tissues or not. It is, to all intents and purposes, a simple hyperplasia of the connective tissue produced by a sub-acute variety of inflammation.

Its treatment is, of course, impossible, and its onset and growth insidious and beyond the power of the clinician for diagnosis.

Its causes are many and indefinite; syphilis probably being one of its most common factors, while traumatism, or "catching cold," may also be the exciting cause.

Gummata occur in this position in the same manner as elsewhere, and by pressing on or involving the thoracic organs produce untold disorders. The growths are identical with the

ordinary gummata and are to be treated by the same measures, such as mercury in some form, and iodide of potash. They most generally are situated in the connective tissue, but are frequently found in all the mediastinal tissues.

Emphysema of the mediastinum is fortunately of exceedingly rare occurrence, and only occurs from trauma due to wounds or operations, or from the rupture of some small air tube due to tubercle, or inherent weakness and dilatation. If the leakage be continuous and occurs with each inspiration, death comes on very rapidly from collapse of the lung, for in such a case the opening, either in the pleura or in the air tube, permits the entrance of air during inspiration, but by a valve-like action prevents its exit during expiration, so that the chest becomes more and more filled with air at each respiratory movement. One of the most common causes of mediastinal emphysema is probably tracheotomy, and Champneys, in the *Lancet* for March 4th, 1882, p. 349, makes an interesting contribution to the production of this condition from various causes. Some of his conclusions may perhaps be introduced here.

1. That emphysema of the anterior mediastinum occurs in a certain number of tracheotomies.

2. It is often associated with pneumothorax, to which it stands in causal relation, since pneumothorax may be the cause of death after tracheotomy.

3. The route selected by the air is the space behind the deep fascia.

4. Emphysema of the anterior mediastinum may or may not be associated with emphysema of the neck.

5. The conditions favoring the production of mediastinal emphysema are division of the deep fascia of the neck, obstruction to the air passages and inspiratory efforts.

6. The dangerous period during tracheotomy is the interval between division of the deep cervical fascia and the introduction of the tube.

7. The deep cervical fascia should not be raised from the trachea.

The symptoms of mediastinal emphysema are in some instances very evident, particularly if the superficial tissues be infiltrated. The history of the case, the character of the injury, and the rapidity with which symptoms arising from the mediastinum assert themselves, all aid in the formation of a diagnosis; the only remaining lesions from which it is to be distinguished being hemorrhage into the mediastinal space, or the rupture of an abscess, both of which may come on even more rapidly than the emphysema.

Extra-pericardial emphysema is a condition the distinct causes of which are not well recognized, and consists in an accumulation of air around the pericardium in such a manner that the cardiac movements are more than ordinarily interfered with. In other words, it is an emphysema of a limited area rather than the whole space. It may develop from the same causes as the ordinary form. (See cases 62, 63 and 64.)

Enlargement of the *Thymus gland* may, in some cases, produce symptoms and physical signs closely resembling any form of tumor of the anterior mediastinum.

Such a condition of affairs is rare, owing to the fœtal character of the gland, but it has occurred in quite a number of cases. The causes for such a hypertrophy are not clearly known, and the treatment is equally unsatisfactory, while the differential diagnosis of this condition from other diseases of this space is virtually out of the question, unless percussion gives a dullness beginning high up in the neck and extending without a break down along the chest wall.

The consideration of *enlargement* of the *mediastinal glands* has already been partially gone over when the writer was speaking of abscess. We may have two varieties of enlargement, that caused by simple acute or chronic inflammation, and that produced by the deposit of tubercle, the latter being, of course, the most important from a fatal point of view. The diagnosis of enlarged bronchial glands is much more easily made than that of enlarged glands in the other parts of the mediastinum, since, if the patient throws the head well back, and the ear of

the physician be placed over the sternum first below the suprasternal notch, the characteristic purring sound during respiration may be, in most cases, clearly heard.

The symptoms of strumous or tubercular enlargement arise so clearly before the mind's eye in many cases that the character of the enlargement is easily decided upon. The presence of strumous glands elsewhere, or of signs of pulmonary phthisis, or of tubercle, anywhere in the body, along with symptoms apparently arising in the mediastinum, point very strongly to tubercular glands or a tubercular tumor in this region, or a growth dependent on struma, but hardly to be called tubercular. The wasted, tubercular appearance of the patient, the anorexia, and general failure of vital power, with the peculiar signs so characteristic of tuberculosis or scrofula, fill up the breaks in the evidence until there remains scarcely any doubt; and, finally, the concomitant physical signs, such as those mentioned, along with dullness on percussion, if the growth be at all in the anterior position of the chest, complete the history of the case. The tubercles may arise in the glands themselves, or become secondary growths, owing to primary disease of the lung or pleuræ, and in many cases at the post-mortem the tubercular involvement is so general that it is impossible to decide as to the primary seat.

An affection of the mediastinum, which must be very rare indeed, is true *œdema* of its connective tissue, and its very rarity, combined with its ambiguous symptoms, renders an ante-mortem decision impossible, unless œdema, or some common cause of œdema, exists elsewhere. Pathologically, it is in no way different from other dropsical accumulations, and etiologically it depends on the same causes for its production. It goes without saying that œdema of this space in cases of general dropsy is by no means rare, and that what has just been said refers to a condition in which the mediastinum is the seat of the œdema, with scarcely any or no effusion elsewhere.

Chondromata of the soft parts of the mediastinum do occur, but are exceedingly rare, and are almost unknown, except where

combined with sarcomata or some other growth. The clinical history of these formations is identical with that of any other tumor of the mediastinum. They most generally appear in the glands rather than in the simple connective tissue, and are, therefore, beyond operative influence. Osteo-chondromata or Enchondromata, starting from any part of the cartilaginous walls of the mediastinum, or from the bone enclosing this space, are much more common, although rare. If they begin on the internal surface of the chest wall they naturally extend inward, and produce pressure symptoms which may resemble in every way those produced by the other growths. In such cases it will be found, on carefully percussing the chest wall, that there is a certain point, of a limited nature, where absolute flatness or great dullness exists, and where the tumor takes its origin.

Operative procedures are as dangerous in such cases as in most mediastinal disorders, but if the cartilages of the ribs, or the ribs or sternum, be extensively diseased, with apparently little involvement of the internal organs, and the symptoms are pressing, then radical measures may be taken for relief. Such a procedure was instituted in Kolaczek's celebrated case of enchondroma of the ribs and sternum, which was operated upon, excisions of the third, fourth, fifth and sixth ribs in part, and a portion of the sternum being removed; notwithstanding the fact that emphysema of the thorax came on, recovery took place.

SUMMARY.

The following brief summary of the conclusions drawn in this essay may not be out of place, since it will only deal with generalities:—

1st. Cancer is more frequently found in the mediastinal spaces than any other morbid process.

2d. Abscess is the morbid process next in frequency of occurrence.

3d. Sarcoma occupies a third position as to frequency.

4th. Lymphomata and Lymphadenomata occupy a fourth place, but are much more rare than the others mentioned.

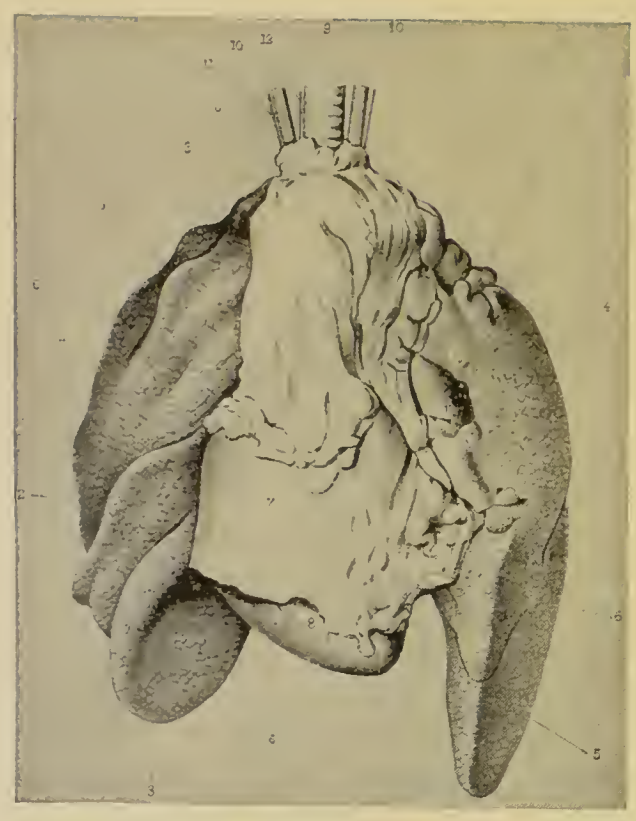
5th. The Anterior Mediastinum is affeeted far more frequently than are the other two spaees.

6th. Most mediastinal growths oecur in adults.

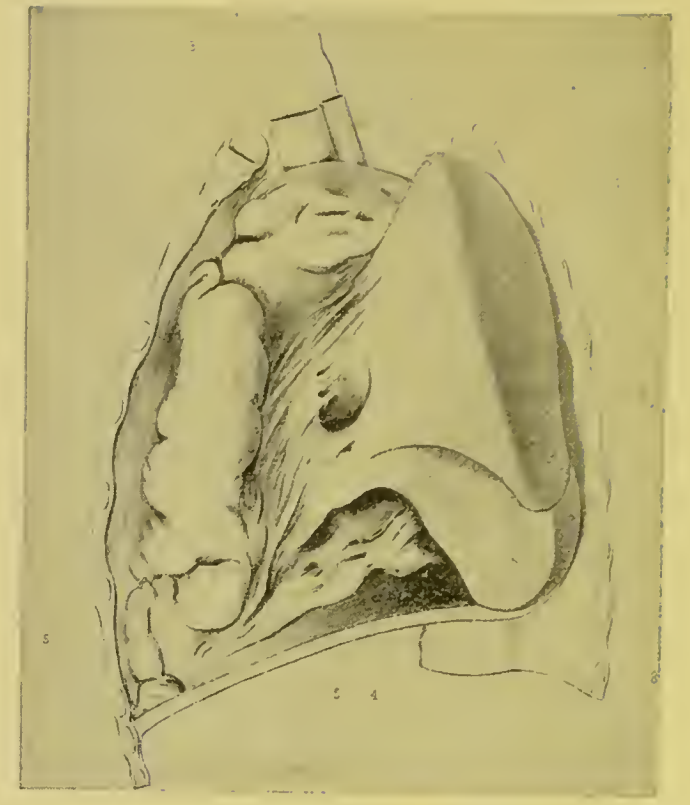
7th. More males are affected than females by mediastinal disease, be that disease what it may.

8th. Cancer and Sarcoma of this spaee are necessarily fatal.

9th. Abscess is recovered from in about 40 per cent. of the eases.

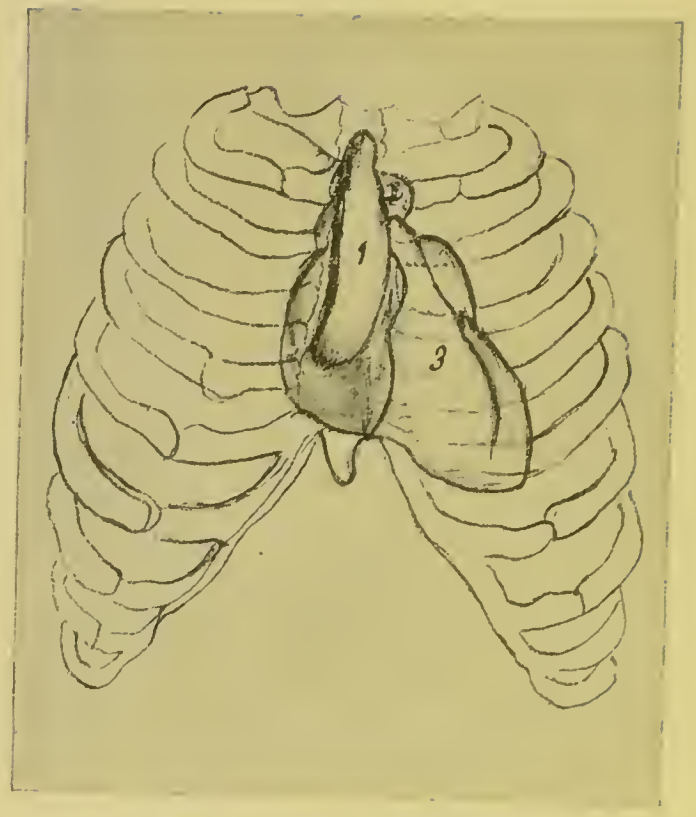


Pernice's Case of Sarcoma of Anterior Mediastinum. See Case No. 83, in Sarcoma Table—*Pisano*, Palermo, 1884, v.



Lateral View of Same.

Kolaczek's Case of Enchondroma. Resection of 3d, 4th, 5th and 6th ribs and portion of Sternum.



1. *Tumor.* 2. *Aorta.* 3. *Right Ventricle.*

Bruen's Case of Sarcoma of Anterior Mediastinum. American System of Practical Medicine Vol. III, p. 866.